

WAAS CH 61019 W02A	APP CRS 022°	Rwy Idg 3999 TDZE 929 Apt Elev 946
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Federal Aviation Administration

For uncompensated Baro-VNAV systems, LNAV/VNAV DME/DME RNP-0.3 NA. VDP and Baro-VNAV NA when altimeter setting not received, use Sparta altimeter setting 160 feet; increase LPV and LNAV/VNAV all Cats visibility to 1.0 mile; increase LPV and LNAV/VNAV all Cats visibility to 1.0 mile; increase LPV and LNAV/VNAV all Cats visibility to 1.0 mile.

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KANSAS CITY CENTER
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Aeronautical Charting Forum 15-02 Reston, VA

Procedure NA for arrivals at
BUNKS on V175 northwest bound.

BUNKS

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Instrument Procedures Group
October 27, 2015

Charting Group
October 28-29, 2015

Held at USGS

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Instrument
Procedures Group

AERONAUTICAL CHARTING FORUM (ACF)
MEETING 15-02 October 27, 2015
HOST: United States Geological Survey (USGS)
12201 Sunrise Valley Drive
RESTON, VA 20192

INSTRUMENT PROCEDURES GROUP (IPG) AGENDA

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|---|--------------------------------------|
| I. <u>OPENING REMARKS</u> | Tom Schneider |
| II. <u>USGS WELCOMING COMMENTS</u> | Lance Christian |
| III. <u>REVIEW MINUTES OF LAST MEETING, ACF 15-01</u>
Two corrections: 10-01-294 incorrect reference; 14-02-317 corrected comments | Steve VanCamp |
| IV. <u>BRIEFINGS</u>
FAA Order 7910.5D Aeronautical Charting Forum
Safety Review - GPS Approaches to 1800 RVR | Tom Schneider
Catherine M. Graham |
| V. <u>OLD BUSINESS (Open Issues)</u> | <u>OPR</u> |
| 92-02-110 Cold Station Altimeter Settings | AFS-470 |
| 02-01-241 Non-radar Level and Climbing Holding Patterns | AJV-8 |
| 07-01-270 Course Change Limitation Notes on SIAPs | AFS-420 |
| 07-02-278 Advanced RNAV (FMS/GPS) Holding Patterns
Defined by Leg Length | NBAA |
| 10-01-292 Removal of the Visual Climb Over Airport Option
on Mountain Airport Obstacle Departure Procedures | AJV-8 |
| 10-01-294 RNP SAAAR Intermediate Segment Length and
ATC Intervention | AFS-420 |
| 11-02-298 Converging ILS Coding and Chart Naming
Convention | AFS-410/420 |
| 12-01-299 Loss of CAT D Line of Minima in Support of
Circle-to-land Operations. | AFS-420 |
| 12-01-301 Publishing a Vertical Descent Angle (VDA) with
34:1 Surface Penetrations in the Visual Segment | AFS-420 & all ACF |
| 13-02-312 Equipment Requirement Notes on Instrument
Approach Procedures | AFS-420 |

14-01-315	90 Degree Airway-to-RNAV-IAP Course Change Limitation: Arrival Holds	AFS-420 (US-IFPP)
14-01-316	RNAV Fixes on Victor Airways Used for RNAV SIAPs	AJV-54
14-02-317	Use of GPS on Conventional (Ground-Based NAVAID) Instrument Approach Procedures (IAPs)	AFS-470
14-02-318	Charting LNAV Engagement Altitudes	AFS-420
15-01-319	Removal of the Epoch Year documentation on 8260-series FAA Forms	AFS-420
15-01-320	Common Sounding Fix Names	AJV-8/NFDC
15-01-321	Coding of Missed Approach for ILS31L and ILS31R at KJFK	AFS-420 (US-IFPP)
15-01-322	Charts for SID, STAR, and OPD do not provide accurate information for filing a flight plan in many cases.	AFS-420

VI. NEW BUSINESS (New Agenda Items)

SPONSOR

15-02-323	Depiction of Low, Close-in Obstacles on SIDs & ODPs	NBAA
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VII. NEXT MEETINGS

ACF 16-01 is scheduled for April 26-28, 2016, hosted by ALPA – Herndon, VA
ACF 16-02 is scheduled for October 25-27, 2016, hosted by TBD.

June 15, 2015

Dear Forum Participant

Attached are the minutes of the Aeronautical Charting Forum, Instrument Procedures Group (ACF-IPG) meeting held on April 28, 2015. The meeting was hosted by Pragmatics, Inc, 1761 Business Center Drive, Reston, VA. An office of primary responsibility (OPR) action listing (Atch 1) and an attendance listing (Atch 2) are appended to the minutes.

Please note there are briefing slides inserted in the minutes as PDF files shown as stickpins. All are asked to review the minutes and attachments for accuracy and forward any comments to the following:

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The AFS-420 web site contains information relating to ongoing activities including the ACF-IPG. The home page is located at:

http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs420/acfigp/

This site contains copies of minutes of the past several meeting as well as a chronological history of open and closed issues to include the original submission, a brief synopsis of the discussion at each meeting, the current status of open issues, required follow-up action(s), and the OPR for those actions. There is also a link to the ACF Charting Group web site. We encourage participants to use these sites for reference in preparation for future meetings.

ACF meeting **15-02** is scheduled for **October 27-29, 2015** with Lockheed Martin as host. ACF **16-01** is scheduled for **April 26-28, 2016** with ALPA as host.

Please note that **meetings begin promptly at 8:30 AM**. Dress is business casual. Forward new agenda items for the 15-02 ACF-IPG meeting to the above addressees not later than October 8, 2015. A reminder notice will be sent.

We look forward to your continued participation.

Thomas E. Schneider, FAA/AFS-420
Co-Chairman, Aeronautical Charting Forum,
Chairman, Instrument Procedures Group

**GOVERNMENT / INDUSTRY AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP**

**Meeting 15-01
Pragmatics, Inc.
April 28, 2015**

1. Opening Remarks:

Tom Schneider, AFS-420, Flight Standards co-chair of the Aeronautical Charting Forum (ACF), and Chair of the Instrument Procedures Group (IPG), opened the meeting at 8:30 am on April 28. Pragmatics Corporation hosted the meeting at their Reston, VA facility. Steve Vancamp made welcoming and administrative comments on behalf of ISI/Pragmatics. A listing of attendees is included as attachment 2.

2. Briefings:

a. Tom Schneider, AFS-420, discussed enhancements to the ACF-IPG web site, including the functionality of the site. Previously missing issue papers have been located and PDF history files created and posted. Minutes of previous meetings are also shown. The next effort will be to make a user-friendly search mechanism for the site.

b. Kevin Bridges, AIR-131, briefed on a recently issued Special Airworthiness Information Bulletin (SAIB) on step-down fixes (SDF's). The FAA began to randomly code some waypoints (WPs) prior to the FAF SDF's, which AIRNC 424 allowed (not written to prevent). Some Aircraft Flight Management Systems (FMS) equipment has limited data base storage capacity and cannot support these fixes. The FAA stopped coding WP's prior to the FAF as SDF's, but several hundred still exist. It will take a while to fix these, so SAIB 15-16 was published April 23, 2015. It recommends OEM and other equipment manufacturers modify their instructions to the database suppliers regarding removing SDF's from the database. This allows the database suppliers to remove the step-down designation on WP's prior to the FAF before sending out data and will ensure that WP's prior to the FAF do not get deleted. If one is observed, notify the data base provider. Lev Prichard, Allied Pilots Association, inquired how to receive the SAIB and Kevin advised it is on the FAA home page as a link; copy attached. Tom Schneider, AFS-420, inquired about priority of fixing procedures and Kevin advised they will be modified as procedures come up for review. Vince Massimini, MITRE, inquired if all have been identified. Kevin said he did not know, adding that all records would need to be examined since the original coding issue was random. Questions were raised about how this came about, with emphasis on preventing similar occurrences. Tom advised Order 8260.19 doesn't specify coding guidance. Discussion followed on ARINC records and how database providers work. Kevin added that some equipment can support SDF's and they are unaffected by this SAIB. This SAIB is for equipment that cannot support SDF's and includes instructions on how to remove the SDF's. There also was discussion on safety concerns with possible missing WP's. Rick Dunham, AFS-420, asked Valerie Watson, AJV-553, if there is a way to get an automation dump on how many there are. Valerie agreed to research this. Kevin said previous conversation with Brad Rush, AJV-54, had indicated it would be an intensive search. Ted Thompson, Jeppesen, gave a brief history on issue.

Editor's note: After the ACF, Garmin provided a list of affected SDF's.

3. Review of Minutes of Last Meeting:

Steve Vancamp, AFS-420, (ISI/Pragmatics Contract Support), briefed that the minutes of ACF-IPG 14-02, which was held on October 28, 2014, were electronically distributed to all attendees as well as the ACF Master Mailing List on Dec 12, 2014. There were no changes submitted, and the minutes are accepted as distributed.

4. Old Business (Open Issues):

a. 92-02-110: Cold Station Altimeter Settings (*Includes Issue 04-01-251*).

Kel Christianson, AFS-470, briefed that a Notice to Airman Publication (NTAP) was published in December 2014, making cold temperature altitude corrections at cold temperature restricted airports mandatory. The language in the NTAP was changed in Feb 2015 to non-mandatory to allow operators additional training time. In September of 2015, the language in the NTAP will change back to mandatory and cold temperature altitude corrections will become mandatory. An Information for Operators (InFO) was published in Feb 2015 detailing the change. In March 2015, a "snowflake" icon with associated temperature began being placed on affected FAA approach plates and will be completed by March of 2016. The procedures in the NTAP will be evaluated during the 2015/2016 winter season to see if any changes need to be made. If no changes need to be made, the information from the NTAP may be included in the AIM. Rick Dunham, AFS-420, reemphasized all the efforts to promulgate the information, so there should be no surprises. Rich Boll, NBAA, asked if the InFO should be released again, and Kel said he would take the suggestion to his management. Michael Stromberg, Air Wisconsin, asked if there is any change in the airport listing. Kel advised that MITRE is running a new list and he will compare them. Ted Thompson, Jeppesen, questioned if an airport is added to NTAP list, what triggers a NFDD change notifying chart makers of changes? If the list is dynamic, procedures need to be in place for when changes occur for NFDD action to take place. Kel acknowledged this and if a new airport is affected, will send the cold weather airport remark to NFDC for publication. The NASR airport remark will continue to serve as the trigger to add the snowflake and temperature to the charts. Kel asked if Jeppesen will use the snowflake icon and Ted said their policy is to explain in word form vs. icons. Pilots at the ACF said they just need to know if an airport is affected. Michael asked about turnaround time from once an airport is identified as a cold weather location to the information reaching the chart. Kel stated that the list will be updated each year in time for changes to be published by the fall. Charles Wade, Delta Airlines, inquired about how to get on the notification list for changes so that they had more lead time to react. Ted said if approaches are added, there may be a period where some approaches at an airport have the information on the chart and some do not, and inquired if these criteria will be in TERPS policy; the answer is currently "no" (see comment below about incorporating into an FAA directive or Advisory Circular). Valerie voiced that since the "cold weather" trigger is a NASR airport remark, the snowflake (or in Jeppesen's case, the note) should be added to ALL approaches at that airport. Gary McMullin, Southwest Airlines, brought up ATC issues of not allowing pilots to fly corrected procedures and would like a meeting discussing what is actually happening. Kel said ATC must allow the procedure to be flown, and Gary Fiske, AJV-82, said controllers cannot disapprove a procedure, but ATC can delay. A military participant questioned about military airfields not being in the NTAP. The military said they are not worried about their aircraft since they have procedures; however, they are concerned about the civilian operators flying into military airfields. They are also concerned about GA airports in airspace controlled by military. Tom Schneider, AFS-420, acknowledged a lot of work has been accomplished, and now all of this needs to be quantified into an FAA directive; i.e., Order and/or an Advisory Circular. All the requirements/policies need to be put into writing in addition to the information that goes into the NTAP and AIM/AIP. Ted added that in addition to adding affected military

fields, FAA Form 8260-7A (Special instrument approach procedures) needs to be included (since these are not maintained by the same folks).

Status: AFS-470 will review these comments/questions and report back at the next meeting. **Item Open:** AFS-470

b. 02-01-241: Non Radar Level and Climb-in-Hold (CIH) Patterns.

Gary Fiske, AJV-82, briefed that Eric Fredricks, AJV-72, had the IOU but has changed positions in the ATO. A DCP was sent out for comment and returned in early February 2015. Work was delayed by higher priority activities, so he was asked to take over. The June 25th charting date will not be made.

Status: Gary Fiske is working thru the comments and pub date is now anticipated in December 2015. **Item Open:** AJV-8

c. 07-01-270: Course Change Limitation Notes on SIAPs.

Tom Schneider, AFS-420, provided a slide showing language in draft Order 8260.19G (same as last ACF); all formal coordination comments relating to the order have been received and are being mitigated. John Collins stated his concern is not with vertical ROC, rather his concern is with lateral ROC on RNAV segments at more than 30 NM from the airport since there is a difference from en route sensitivity. He questions if en route obstacle clearance applies to feeder routes for RNAV (as it does for ground based). Tom advised the system used on the approach (conventional vs. RNAV) will evaluate accordingly. John questioned the scaling at 30nm.

Status: Tom took IOU to bring issue back to AFS-420. **Item Open:** AFS-420

d. 07-02-278: Advanced RNAV (FMS/GPS) Performance of Holding Patterns Defined by Leg Length

Joshua Fenwick, AeroNav Data, was not present to brief on ARINC 424 meeting. Tom Schneider, AFS-420, briefed using a slide provided by Steve Jackson, AFS-420, consisting of proposed AIM language. This proposed AIM language was provided to NBAA in advance for feedback. Rick Dunham, AFS-420, stated that the slide was mislabeled since we have no RNP holding. Rich Boll, NBAA, provided a short history on this item specifically that observed RNAV performance in holding is different than current AIM guidance. The equipment extends the outbound leg to achieve the desired inbound leg programmed length. AIM paragraph 5-3-8 holding guidance is not representative with regard to bank angles and says holding distance is applied to outbound leg, whereas the RNAV systems extend the outbound leg to make distance good on the inbound leg. Kevin Bridges, AIR-131, confirmed that different boxes are designed to different standards depending on type/usage. Rich discussed his review of Steve's proposed AIM language and inquired if there was a shift toward requiring stronger language (perhaps new information). Rick advised there has been no shift, and this is AFS-420's first draft at what AIM holding language should be, showing how pilots interpret it and how it is to be used. Rich stated that this proposed language is overly complex and hard to understand. Rich would like the ACF to form an ad-hoc workgroup to look at holding operations, certification, criteria, and query OEM's for recommendations on revised AIM guidance specific to the issue. Topics would be: Is this an issue (altitude)? When is it an issue? When should it be considered? And what are viable alternatives? Tom inquired how to move this issue forward. Rick said he was not against

a group forming to address this, but does not want this ACF issue expanding and commented that no protected airspace risk based data has been presented on this issue by anyone. Revised AIM language can raise awareness to all groups and his office is also looking at IPH language on how holding is flown, but there are questions on the training aspect. Group discussion followed on if there is actually a problem with what aircraft are doing. Gary Fiske, AJV-82, stated that in light of the radar environment in the U.S., ATC monitors flights and adjusts as necessary. Rich indicated that the ultimate solution of the group may be the AIM guidance and this may be all that is needed. Tom discussed holding templates are 60+ years old and wondered if FMSs are keeping aircraft inside these areas, and if so, do we care how? Rick said his goal would be for the ad-hoc group to take the AFS-420 draft AIM language and adjust as necessary to meet industry needs. Lev Prichard, Allied Pilots Association, added that he feels there is not a large technical issue, but rather a need to renew AIM/IPH guidance. Rick said the Holding Order 7130.3A will be absorbed by Order 8260.3C; the criteria updated, and will be out for coordination soon. Brian Townsend, American Airlines, said the answer may be as simple as a cautionary statement that if you are doing FMS holding, you may not be getting your desired results. Tom stressed the need for generic language such as desired distance on legs. Rich volunteered to chair an ad-hoc holding group since he has already reached out to industry on this topic. They will look at AIM language, review draft Order 8260.3C language, and look at including information that ATC is monitoring the aircraft flight pattern. Rick volunteered any assistance to the group as required from AFS-420. The sign up list is included.

Status: Rich Boll volunteered to chair an ad-hoc holding group. **Item Open:** NBAA (Rich Boll), Ad-Hoc sub group

e. 09-02-291: Straight-in Minimums NA at Night

Tom Schneider, AFS-420, briefed using a slide provided by John Bordy, AFS-420, recapping the issue of segment width differences for circling vs. straight-in. The old policy was a 400' width and the new policy is a 200' width, providing consistency between straight-in and circling. The memo issued in November 2014 was also displayed to the group. The policy is now in use by Aeronautical Information Services (AIS). Procedures will be updated at the time of the next Periodic Review. Lev Prichard, Allied Pilots Association, asked if PAPI/VASI mitigation for 20:1 surface penetrations can be waived and Rick Dunham, AFS-420, said yes. Tom advised the issue is still open in US-IFPP, pending publication of Order 8260.3C and asked NBAA if they would be willing to close.


Status: Rich Boll, NBAA, agreed to close. **Item Closed.**

f. 10-01-292: Removal of the Visual Climb Over Airport Option on Mountain Airport Obstacle Departure Procedures

Gary Fiske, AJV-82, advised he had inherited this item and that the DCPs that were sent out for comment on Order JO 7110.65 are back; however, he has not acted upon them yet due to staffing changes and he needs to review the issue again. Gary said the original goal was a June 2015 publication, which will not happen, but if possible, his office will try for a December 2015 publication. Along with the DCP's, the AIM and PCG guidance will be reviewed by the ATO.


Status: Gary will work the issue and report back at the next ACF. **Item Open:** AJV-8 (Gary Fiske)

g. 10-01-294: RNP SAAAR Intermediate Segment Length and ATC Intervention.

Tom Schneider, AFS-420, briefed  showing new language for the draft Order 8260.58A, adding that TJ Nichols, AFS-420, is lead on the Order. FAA JO 7110.65 paragraph 4-8-1 issue is already taken care of. Gary Fiske, AJV-82, said language in Order JO 7110.65 does not allow vectoring to an RF leg. Rick Dunham, AFS-420, advised that the last piece of the puzzle is Order 8260.58A language.


Status: Item open pending guidance in Order 8260.58A. **Item Open:** AFS-420

h. 11-02-298: Converging ILS Coding and Chart Naming Convention.

Kevin Allen, American Airlines, stated that the Minneapolis (KMSP) procedures are now coded and the Dallas (KDFW) procedures are in the process of being updated. The converging approaches at Dulles (KIAD) are being cancelled. Tom Schneider, AFS-420, briefed  his IOU showing revised language for simultaneous procedure chart notes in Order 8260.19G. A slide was also presented showing the new naming convention example with "V" in approach name and the converging in parentheses (silent). John Blair, AFS-410, advised that pilot guidance is in the next AIM/AIP. Kevin would like to keep the issue open until all IOUs are accomplished. Ted Thompson, Jeppesen, questioned if the item will remain open with the limited number of affected procedures or closed when those are revised; his concern is about this becoming a perpetual briefing item.

Status: Tom advised item will remain open and briefed at next ACF. The intent is for it to be closed at the next ACF when the AIM/AIP and Order 8260.19G guidance is published. **Item Open:** AFS-410 (AIM/AIP Language) AFS-420 (Order 8260.19G language)

i. 12-01-299: Loss of CAT D Line of Minima in Support of Circle-to-Land Operations.

Tom Schneider, AFS-420, briefed a slide  provided by John Bordy, AFS-420, showing language going into Order 8260.3C. Lev Prichard, Allied Pilots Association, questioned RAPT actions on issue. Tom stated that the Airports Division has a problem with an airport having Cat C-D minimums that cannot support Cat C-D type aircraft. Michael Stromberg, Air Wisconsin, said he flies a Cat D aircraft at 53,000 lbs. Some airports are trying to limit Cat D aircraft because they do not want B747 aircraft operating there, not understanding this would include his aircraft also, thus eliminating their regional jet service. Michael added that to have an airport say they do not want Cat D service is a bad way to limit the type of aircraft operating there. If they want to limit a size aircraft, they need to say that. Tom said proposed guidance is in progress and this item is open at the US-IFPP, adding that work is being done on consolidated surfaces and that changing categories involves rulemaking. Lev inquired about what the airport operator's responsibility is with this. Rick Dunham, AFS-420, spoke about the RAPT process being a group effort from all concerned to work these issues for each airport. A group discussion followed on what an airport can support, i.e., weight and tail heights, infrastructure; runway safety areas, airport reference codes (ARCs), airport design, etc. There was discussion on how there needs to be separation between design standards and operating standards. Rick stated that airport categories were created 50+ years ago. There are ongoing discussions and the initial thought is to get the RAPT more involved in considering all capabilities at a given airport and matching these capabilities to the aircraft that use the airport. Tom showed the December 4, 2014 memo issued by AFS-400 regarding approach category inclusion. Bruce McGray, AFS-410, suggested the FAA consider an outreach to regional carriers for more information. Tom

advised there is guidance in Order 8260.3C pointing to the RAPT Order (8260.43), and that the RAPT Order is being revised to incorporate this guidance.


Status: Rick suggested keeping issue open pending publication of Order 8260.3C, update of Order 8260.43, and other related work being done regarding aircraft categories. **Item Open:** AFS-420

j. 12-01-301: Publishing a Vertical Descent Angle (VDA) with 34:1 Surface Penetrations in the Visual Segment (*Includes Issue 13-01-309 LP Procedure Cancelled Because of VDA Not Being Charted*)

Joshua Fenwick, AeroNavData, was not present to brief an update from the ARINC NDB workgroup. Tom Schneider, AFS-420, briefed a slide provided by Dan Wacker, AFS-420 contract support, emphasizing that item #1 in draft Order 8260.3C language has been established to address the criteria portion. Lev Prichard, Allied Pilots Association, asked if this means the FAA intends placing a VDA on every procedure including a circling minimums approach, unless Flight Inspection determines it cannot be done (even after trying different designs/angles/displaced thresholds/RAPT process review). Rick Dunham, AFS-420, answered yes, but that applies to only those straight-in aligned procedures (per Order 8260.19F, paragraph 8-6-8s). Tom briefed slide item #2 regarding draft Order 8260.19G language, showing how the chart note will read. Rick advised that the visual segment language has been rewritten for the AIM/AIP and is being reviewed in AFS-400. John Moore, Jeppesen, inquired about possible differences between Order 8260.3 and Order 8260.19 language regarding reworking procedures that fail flight check. Tom explained the Order 8260.3 is for design and Order 8260.19 is for documentation. John Collins, GA pilot, asked what actually gets documented as directed in Order 8260.19 and Tom responded information placed in the additional flight data block of FAA Form 8260-3. Discussion followed on how this will not prevent manufacturers from publishing an angle in their database and/or on a chart if they so choose, but the required note will provide warning to the pilot if they choose to follow that angle below the MDA. The note will now read: "Visual Segment – Obstacles." Ted Thompson, Jeppesen, asked about the note wording rationale. Tom responded this is an AFS group consensus and it could have been different (matter of opinion), but this was the final AFS/AIR group decision. Valerie Watson, AJV-553, added guidance is already in the AIM/AIP about this angle being advisory and we are expanding on that. Tom briefed that item #3 shows the SAIB guidance (previously discussed) as put out by Kevin Bridges, AIR-131. Tom briefed item #4 showing draft (DCP format) of proposed AIM/IPH language and again advised it is being reviewed internally in AFS-400, adding that nothing is finalized yet. Rick said to keep in context that there are over 20,000 procedures and only 180 (so far) have encountered this issue; the intent is to either redesign the procedure(s) to eliminate the issue or provide pilot education that there may be obstacles in the visual path. Lev asked if visibility tables are being looked at and Rick responded "yes," but no change yet. Ted Thompson, Jeppesen, added visibility tables are typically based on level segments of the approach and not revised with vertically guided procedures. Tom said the last IOU was for Aeronautical Information Services (AIS) to develop a list of affected airports for the web site and discussion with Brad Rush, AJV-54, prior to the meeting, indicated there was some resistance to that idea. Rick stated that at some point, maybe there should be no procedure developed at some airports due to obstacles. There is a balance between safety and airport access, adding this is our first attempt at guidance change.


Status: Tom requested all read the AIM draft (work in progress) in the minutes and send comments to AFS-420. **Item Open:** AFS-420

k. 13-02-312: Equipment Requirement Notes on Instrument Approach Procedures

Mike Webb, AFS-420, briefed  regarding a sub-group that met to formulate ways to de-conflict required equipment information on charts; i.e., briefing strip notes vs planview notes may list different requirements than the procedure title indicates. This sub-group broke out what was specifically required to enter the procedure and fly the entire procedure in addition to Final Approach Segment requirements. The goal is to locate information in one spot on U.S. Government charts to help the pilot determine requirements (this process should also work on non-government vendor chart vendor products). Just as the PARC recommendation (with VOLPE input) for a PBN information box, the result is having an "equipment requirements box," as shown on the slide, in the same location on each chart. Ted Thompson, Jeppesen, stated that if a note applies in general, you want that in one location, but if a note has applicability to a specific point in space, it should be attributed to the point where it applies. Mike asked for ACF direction/input from here. The move is for standardization. The ACF attendees liked the proposal and the sub-group will formalize it as a recommendation. Tom Schneider, AFS-420, advised that any changes will be submitted in Order 8260.19H (at the earliest). Tom took an IOU to work on draft language for the Order 8260.19H, in consultation with Valerie Watson, AJV-553, to facilitate charting issues. Ted recommended drafting language in a way that also supports long term PBN goals for notes. Recommendations should include what to name the box so that it encompasses both conventional and RNAV type instrument procedures.

Status: Sub group will formalize recommendations. Tom took an IOU to work on draft language for the Order 8260.19H. **Item Open: AFS-420/ AFS Sub Group**

l. 14-01-315: 90 Degree Airway-to-RNAV-IAP Course Change Limitation; Arrival Holds

Tom Schneider, AFS-420,  said issue was brought to US-IFPP for discussion. Rick Dunham, AFS-420, said initial discussion was to harmonize to 90 degrees to simplify for procedure design and standardize across the board vs. 120 degrees which presented some airspace issues. The question becomes the magnitude of the problem and how many resources will be required to resolve it. Decision is to place on hold and work at a later date. The item will remain open in the ACF and US-IFPP. AFS-420 will brief when any progress is made. Rich Boll, NBAA, indicated his one main concern is MagVar change resulting in exceeding a 90-degree airway intercept turn.

Status: AFS-420 will brief when any progress is made. **Item Open: AFS-420**

m. 14-01-316: RNAV Fixes on Victor Airways Used for RNAV SIAPs.

Tom Schneider, AFS-420, spoke with Aeronautical Information Services (AIS). They have an IOU on the issue and Brad Rush, AJV-54, advised they are still working on the issue. Item is status quo, nothing to report, and still open.

Status: AJV-54 working issue. **Item Open: AJV-54**


n. 14-02-317: Use of GPS on Conventional (Ground-Based NAVAID) Instrument Approach Procedures (IAPs)

Kel Christianson, AFS-470, stated that a draft Advisory Circular (AC) has been completed to address this issue and is under review by his management. AC 90-108, *Use of Suitable Area Navigation (RNAV) Systems on Conventional Routes and Procedures*, specifies means of

navigation and substitute means of navigation, however the new AC is different. John Collins inquired about the direction this is taking and Kel advised it is essentially “monitoring.” The pilot will need the VOR or NDB working to monitor; i.e., use RNAV for guidance and the conventional systems operating for monitoring and if there are differences between the two, the conventional system takes precedence for course guidance or missed approach. Rich Boll, NBAA, said that would mean if an aircraft is not ADF equipped, then you cannot shoot an NDB approach. Kel supported this statement. A brief discussion followed on differences between alternate means of approach vs. substitute means. Rich discussed the SMO VOR-GPS-A approach being changed to a VOR-A only. He is concerned the RNAV approach may not be operational then. Tom Schneider, AFS-420, said policy is that VOR-GPS procedures will not be removed until an RNAV approach is in place (normally this happens concurrently).

Status: Kel will brief on progress at next ACF. **Item Open: AFS-470**

o. 14-02-318: Charting LNAV Engagement Altitudes

Tom Schneider, AFS-420, briefed  on the last ACF discussion to remove the term “LNAV engagement altitude”, by revising the Order 8260.46 language for a climbing altitude to support a turn without referring to it as an “LNAV engagement altitude.” LNAV engagement is also referred to in Order 8260.53, which is being absorbed into Order 8260.58A, and steps are being taken to remove the term during the transfer. This term is not in the AIM/IPH. Lev Prichard, Allied Pilots Association, asked what this altitude is being called now and why. Tom said this is for the procedure developer, not the pilot, and we are saying there may be an altitude you need to reach before initiating the turn (a VA-DF scenario). It is then an at-or-above crossing altitude required before commencing a turn. Lev pointed out this would be a climbing constraint, and it is convoluted since it is driving whether “Climb Via” vs. “climb and maintain” situation exists. His conclusion is that it’s become a “climb via” scenario. Group discussion followed on existing procedures and different flight director systems. Three examples of ways to handle these: San Antonio (KSAT) – fly heading assigned by ATC; Nashville (KBNA) – fly heading xxx; Houston (KIAH) – heading to altitude to heading. He believes the KSAT example works the best. The question was asked how you reach a standard solution. Tom said there are design constraints for text to be used for charting. Tom advised that Order 8260.46 terminology for initial climb instructions is used when required departure instructions must specify the actual heading to be flown after takeoff. Any existing procedures with “fly runway heading” will eventually be changed. Rick Dunham, AFS-420, advised the RNAV language currently in the Order 8260.53, will go away when absorbed into Order 8260.58A, and he wants to ensure this is being looked at. Tom will look at the language used for KSAT for possible incorporation into Order 8260.46F. Lev restated his desire to make the departures look the same (standardize) as much as possible. Gary Fiske, AJV-82, stated his desire to maintain ATC flexibility. Tom said original policy with for “Radar Vectors To Join RNAV Routes” departures was no coding until you reached the IDF (it was intended for ATC to allow for whatever ATC wanted until that point), which has now changed.

Status: AFS-420 will look at KSAT language to consider additions to Order 8260.46F. **Item Open: AFS-420**


5. New Business:

a. 15-01-319: Removal of the Epoch Year documentation on 8260-series FAA Forms.

Tom Schneider, AFS-420, briefed item submitted by Aeronautical Information Services (AIS) at request of AFS-420 to remove epoch year value associated with magnetic variation (MV) depicted on the applicable 8260-series Form. There is a concern that an older (but correct) epoch year on a procedure form may imply procedure has not been reviewed since that date specified on the form. Tom posed a question to database providers/manufacturers/users regarding need/use of actual epoch year date value on procedure forms. Ted Thompson, Jeppesen, advised Jeppesen determined there is value of epoch year as a reference, but would support removal from the 8260-forms provided the date is readily available thru NASR or appropriate airport/NAVAID record. He added that epoch year data would then not be duplicated since revisions may not occur at same time. Kevin Bridges, AIR-131, said if epoch year values are taken off 8260-series forms, the FAA must ensure all know where to access the information. Valerie Watson, AJV-553, advised epoch year information is not on airport 5010 form. Martin Zillig, Lido, said they prefer epoch year remain on 8260-series Forms, and added other states put the epoch year on procedure plates. Ted said Jeppesen does not. NGA said they need the date information available.

Status: Tom advised he will take this information back to AFS-420 and relay the importance of information availability. **Item Open:** AFS-420

b. 15-01-320: Common Sounding Fix Names

Lev Prichard, Allied Pilots Association, briefed  some examples of common sounding fix names in close geographic proximity, showing as examples three similar names in the Dallas area and two similar names in Atlanta. He said that when he questioned ATC about the three in Dallas, he was informed that the Navy veterans at the facility liked them. Lev acknowledged the massive number of fixes in the NAS and that finding all those with similar sounding names at inception is difficult, but there should be a mechanism to address when similar/confusing names/spellings are identified. A point was made that in the Dallas example, since the fixes are on different types of procedures, there should be no confusion. A spirited group discussion followed with pilot input that your procedure is often changed by ATC requiring a last minute data input into the navigation system during high work load periods, which is problematic if there are similar sounding/spelled fixes in close proximity, no matter what type of procedure the fix is tied to. A question was asked about when the aircraft is cleared to a new fix, shouldn't that fix be on the drop down list in the FMS (no confusion possible) since only one procedure is loaded in the FMS? Ted Thompson, Jeppesen, brought up the precedence of the Cali disaster with an airliner cleared to similar sounding named fix which put them into a mountain, so there is a foreseeable consequence. Gary Fiske, AJV-82, pointed out that when that procedure was designed in the days before FMS databases, aircraft could not have navigated to the wrong NAVAID/fix (not in conventional reception range), but conceded that we are in a new era. Further discussion ensued regarding how the aircraft's geographic position makes an easy cross check for the pilot and that even if the name is similar, the relative distance should indicate a problem. Rich Boll, NBAA, said he has noticed ATC issuing named fixes/WP's instead of headings for weather deviations which has pilots entering points not on their original flight plans. Lev proposed a solution of developing a process to alert the facility and require action, since there currently is not one. Tom Schneider, AFS-420, suggested an addition to Order JO 7400.2K, adding guidance to what is currently in paragraph 3-3-3d, for NAVAIDS, looking for similar sounding names within 300 NM, which prompted more group discussion. Mike Wallin, NFDC, said that when NFDC gets a name request, they do a search and if exact spelling is in use anywhere they deny. If spelled differently (slightly), he has no way of knowing

whether a fix with a similar sounding name is located in close geographic proximity. Mike said the local facilities should be cognizant of their own airspace, identify potential problem fix names, and address the issue in the interest of safety. Gary took an IOU to address the specific fix name issues at Dallas and Atlanta, and if any other very specific obviously problematic issues exist, bring them to his attention. Tom mentioned the NASA reporting system and the Aviation Safety (AVS), Air Traffic Operations Safety Oversight Division, which visits facilities, could address these circumstances too. Tom again mentioned Order JO 7400.2 existing language (policy guidance), inquiring if it can be strengthened, and is there a searchable mileage distance to scan for similarities. Mike said he is not sure who is the OPR in NDFC for that item but will take the IOU to research, and if any committees exist will join.

Status: Gary took an IOU to address the specific fix name issues at Dallas and Atlanta. Mike will take the IOU to research. **Item open:** AJV-8 (Gary Fiske)/ NDFC (Mike Wallin)

Editor's note: Later in the day Mike Wallin added that he had obtained draft language for the Order JO 7400.2, regarding similar sounding fix names, and there is proposed text that will read: "Fixes, WPs and LOMs are developed by Air Traffic, terminal products, DOD and third party developers and must not sound similar to existing fixes, WPs or NAVAIDs named within the originating ARTCC area, the adjacent ARTCC area, or within 300 NM of each location..."


c. 15-01-321: Coding of Missed Approach for ILS31L and ILS31R at KJFK

Lev Prichard, Allied Pilots Association, briefed on an issue encountered by a crew where the missed approach verbiage does not match coding in the Flight Management System (FMS). The verbiage indicates an intermediate level off in the missed approach (use of word "then" in instructions) whereas the coding shows an at-or-above altitude crossing at all points. Lev took this issue to Brad Rush, AJV-54, who looked at it and said there were complications on the 8260-Forms that limited them to coding this way. Gary Fiske, AJV-82, inquired if anyone had asked the New York TRACON of their expectations of what the pilot will do in the event of a missed approach, and Lev said "no" since the procedure is spelled out on the approach plate. Rich Boll, NBAA, added to the discussion with a similar experience with JFK approaches on a different runway last year and when he asked ATC, they indicated they were "at" altitudes, which also did not match coding. Ted Thompson, Jeppesen, did research at Jeppesen on the history on these JFK approaches, and determined there was a back-and-forth change on how these altitudes would be coded. He inquired to Brad who pointed out the 8260-series Forms "boiler plate" guidance that says all altitudes are at-or-above unless otherwise designated. Ted said either the wording has to change to use "at," which also has issues (rapid climb rate not insuring level off), or change to at-or-below (as done in Seattle) since the FMS equipment will change the climb profile (soften) and solve problem. Brad had also reminded Ted that flight procedures are primarily designed for obstacle clearance and not ATC separation. Ted recommends the at-or-below method. Lev said the approaches in question need to be fixed ASAP, since this is a safety of flight issue and the long term solution needs to be addressed. Gary McMullin, Southwest Airlines, advised they have seen many of these before and when taken back to the FPT, all have been corrected with at-or-below altitudes. Lev displayed Order 8260.19F, paragraph 8-6-7d note, on meaning of word "then." Tom said this is written for procedure designers when developing the missed approach text and added that designers use TERPs to evaluate the missed approach segment (40:1 surface) but when there is a level off; the designer must switch to use a level surface evaluation for ROC, which was a major issue in Seattle. Rich said the issue is still the coding not matching what is on the chart. A group discussion ensued with several more examples and discussion of ARINC 424 coding of conventional approaches. Lev restated he is asking the group for two things: Fix the identified

issue at JFK; and for changes to ensure this scenario does not happen again. Ted stated his answer is make altitudes at-or-below, and Tom added that would require a waiver to establish criteria to support as was done in Seattle. The existing criteria is at-or-above, and there is policy to distinguish what the language in the missed approach means and how that should (technically) be coded; however, he cannot control how the conventional procedure is coded by database providers. Information is provided about coding RNAV procedures on the FAA Form 8260-10. Rich said his example was an RNAV procedure and data on the Form 8260-10 form did not match the text. Tom said this is an AIS problem and Brad should have corrected this; Rich advised no. Gary McMullin asked if there was documentation on coding conventional missed approaches (answer no) and could that be a first step. Tom answered FAA does not do coding on conventional procedures, adding that originally the FAA did not want to be involved in coding RNAV either. It is the responsibility of each manufacturer to insure their navigation equipment will comply with the instrument procedure lateral and vertical requirements. A group discussion followed on coding issues including Jeppesen history, OEM issues, climbing and level off issues with and without coding, etc. Tom added there are numerous iterations of missed approach procedures and procedure designers need flexibility. The FAA relies on database coders to interpret what is needed to support the missed approach and that is how the ARINC record is formulated. The question now becomes how much more detail is required? Once the procedure is developed, it goes to flight check for flyability. If it does not pass flight check, they send it back to AIS for revision. Rick Dunham, AFS-420, specifically asked Lev what they are looking for since changes will not happen right away; i.e., issue a NOTAM? Lev said coding is out there and it does not match the procedure. Valerie Watson, AJV-553, stated that the FAA codes ILS procedures, but a Form 8260-10 is not provided as part of a procedure package for database developers outside the FAA. Tom inquired if there are any recommendations to change or improve guidance language to ensure that coding is done correctly.

Status: Rick took IOU for AFS-420 to take item back, review language, reach out to Lev and others, and see if there is an opportunity to clarify language (if needed) or determine if this is an AIS database issue. Tom added issue will be directed to US-IFPP due to impact on surfaces with at-or-below altitudes when executing a missed approach. Rick added US-IFPP has a database group to consider these kinds of issues. **Item open: AFS-420 (US-IFPP)**

d. 15-01-322: Charts for SID, STAR, and OPD do not provide accurate information for filing a flight plan in many cases.

John Collins, GA pilot, briefed  the issue as outlined on the Requirements Document (RD) and showed examples of routes. If you file these routes as written, they are rejected. He recommended that if the pilot cannot file a code (associated with a route), that code should not be provided to the pilot. The problem is not the information but the usage. Gary Fiske, AJV-82, pointed out vector SIDs are not adapted in ERAM and cannot be filed, and John agreed and restated that is the point; do not provide a code if it cannot be filed in a Flight Plan (FP). A group discussion followed on filing, notifications, rejections, etc. Gary added that he had specifically requested no computer coding be allowed by facilities on radar vector SIDs in Order 8260.46, which would fix this problem. Tom stated that the ATO had instructed him to retain computer codes for Vector SIDs for those Air Route Traffic Control Center (ARTCC) locations that desire to use them. Gary added there are many routes in the ATC system that have codes but will never be adapted into ERAM (system cannot handle all of them). Language was put in Order 8260.46 stating that before the computer identification code could be added or deleted on radar vector SIDs, the ARTCC facility had to be contacted for desired action. Rich Boll, NBAA, said NBAA knows there are some SIDs that cannot be filed and that is covered in the AIM. NBAA's

issue is if computer codes are removed from some of the non-adapted SIDs. The RUUDY RNAV SID off Teterboro (KTEB) is not adapted, so if it's filed, the FP will be rejected; however, all the data driven maps today use that computer code to extract route information from the database. Removing the codes could have some serious unintended consequences. Rich suggested not removing the code but rather publish a chart note to not file the computer code in the FP and believes there is precedent on existing SIDs and STARs. Lev Prichard, Allied Pilots Association, stated he uses Foreflight and has encountered the same problem John Collins outlines. A group discussion on timing of FP submissions by user, database supplier, service provider, and Lockheed Martin's 3 hour filing window are causing the subsequent FP rejection after initial acceptance. Lev asked about expanded ERAM storage capabilities to allow longer lead times on FP filings. Ted Thompson, Jeppesen, expanded on Rich's previous comments that the computer code on these procedures is essential. It is used by Jeppesen for the chart image and coding for the procedure; not only the retrieval in the navigation database, but the overlay on data driven en route operations. On procedures not given a computer code by the FAA, Jeppesen has an internal specification for making one and adding it to make possible retrieval of images and overlays in a consistent way, so the absence of the codes is a problem. Rich Boll inquired how we inform pilots not to file certain routes. Tom said it is up to the ATC facility when developing the procedure (some already have the caveat). Gary acknowledged the issue but added this not easily fixed since different facilities want different things. Tom asked if the issue can be taken to ERAM automation staff at the ATO so they can be made aware and respond to it. Rich inquired if there could be an Order 8260.46 and Order 8260.19 forms requirement (charting specification) to have a check box indicating if computer code can/cannot be filed. Gary said the ATO needs to indicate which ones can/cannot be filed for whatever reason, i.e. "...assigned by ATC only..." Tom posed to the group the question if a chart note is needed. John Moore, Jeppesen, cautioned against chart notes in this case and Lev responded everything in Dallas has a chart note and that is good. Suggestion was made that new filing guidance requiring ATC to pre-screen clearances farther in advance. It was acknowledged this would be a good idea, but not likely to happen. Tom said guidance can be added in Order 8260.46 to remind the ATC facilities that if they are not going to allow the SID to be filed (for whatever reason); it must be indicated on the chart. Gary did not see any problem with STARs since all have computer codes.

Status: Tom will investigate what guidance can be added in Order 8260.46F. **Item open:** **AFS-420**

6. Next Meeting

ACF 15-02 is scheduled to be held on October 27-29, 2015, hosted by Lockheed Martin at their Global Vision Center in Crystal City, VA.

ACF 16-01 is scheduled to be held on April 26-28, 2016, hosted by ALPA at their Herndon, VA location.

ACF 16-02 is scheduled to be held on October 25-27, 2016, located and host to be determined.

Please note the attached Office of Primary Responsibility (OPR) listing (attachment 1) for action items. It is requested that all OPRs provide the Chair, Tom Schneider, AFS-420, a written status update on open issues not later than October 8, 2015 - a reminder notice will be provided.

- 7. Attachments (2):**
1. OPR/Action Listing
 2. Attendance Listing

**AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
OPEN AGENDA ITEMS FROM MEETING 15-01**

OPR	AGENDA ITEM (ISSUE)	REQUIRED ACTION
AFS-470	92-02-110: (Cold Weather Altimetry)	Review comments/questions from last meeting and provide a status update at the next meeting.
AJV-8	02-01-241: (Non-Radar Level and Climb-in-hold (CIH) Patterns)	Track FAA Order JO 7210.3 DCPs and report status at next meeting.
AFS-420	07-01-270: (Course Change Limitation Notes on IAPs)	Review concerns presented at the last meeting and provide a status update at the next meeting.
NBAA	07-02-278: (Advanced RNAV (FMS/GPS) Holding Patterns Defined by Leg Length)	Form an ad-hoc work group to review AIM/Order 8260.3 language/ATC monitoring.
AJV-8	10-01-292: (Removal of VCOA Option at Mountainous Airports)	Review comments received on DCP's, along with AIM and PCG guidance.
AFS-420	10-01-294: (RNP SAAAR Intermediate Segment Length and ATC Intervention)	Track changes to FAA Order 8260.58A and report status at next meeting.
AFS 410/420	11-02-298: (Converging ILS Coding and Chart Naming Convention)	<u>AFS-420:</u> Report on changes to Order 8260.19 and IPH. <u>AFS-410</u> Report on changes to AIM/AIP.
AFS-420	12-01-299: (Loss of CAT D Line of Minima in Support of Circle-to-Land Operations)	Report on status of publication Order 8260.3C along with update of Order 8260.43.
AFS-420, and all ACF	12-01-301: (Publishing a Vertical Descent Angle (VDA) with 34:1 Surface Penetrations in the Visual Segment, <i>also includes issue 13-01-309</i>)	<u>AFS-420:</u> Report status of proposed AIM language. <u>All ACF:</u> Provide comments on draft AIM language.
AFS-420	13-02-312: (Equipment Requirement Notes on Instrument Approach Procedures)	Prepare for future work on draft language for the Order 8260.19H, in consultation with Valerie Watson, AJV-553, to facilitate charting issues.
AFS-420 (US-IFPP)	14-01-315: 90 Degree Airway-to-RNAV-IAP Course Change Limitation; Arrival Holds	Placed on hold and work at a later date. The item will remain open in the ACF and US-IFPP. AFS-420 will brief when any progress is made.
AJV-54	14-01-316: RNAV Fixes on Victor Airways Used for RNAV SIAPs.	Provide recommended language on the issue for consideration.
AFS-470	14-02-317: Use of GPS on Conventional (Ground-Based NAVAID) Instrument Approach Procedures (IAPs)	Brief next meeting on progress.
AFS-420	14-02-318: Charting LNAV Engagement Altitudes	Track status of proposed language in Draft Order 8260.46F that eliminates term "LNAV engagement altitude."
AFS-420	15-01-319: Removal of the Epoch Year documentation on 8260-series FAA Forms.	Discuss importance of information internally with AFS-420 and determine what action to take.
AJV-8/NFDC	15-01-320: Common Sounding Fix Names	<u>AJV-8:</u> Internally address specific issues identified. <u>NFDC:</u> Research specific language in Order 7400.2
AFS-420 (US-	15-01-321: Coding of Missed	Research item and take to US-IFPP.

**AERONAUTICAL CHARTING FORUM
INSTRUMENT PROCEDURES GROUP
OPEN AGENDA ITEMS FROM MEETING 15-01**

OPR	AGENDA ITEM (ISSUE)	REQUIRED ACTION
IFPP)	Approach for ILS31L and ILS31R at KJFK	
AFS-420	15-01-322: Charts for SID, STAR, and OPD do not provide accurate information for filing a flight plan in many cases.	Look at incorporating additional guidance language in Order 8260.46F to add a chart note to SIDs that are to be assigned by ATC only.

**ACF 15-01
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**ACF 15-01
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AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
Meeting 15-02 October 27, 2015

RECOMMENDATION DOCUMENT

FAA Control # 15-02-323

Subject: Depiction of Low, Close-in Obstacles on SIDs & ODPs

Background/Discussion:

Beginning with the publication of FAA Order 8260.46, Departure Procedures, and consistent with subsequent revisions, FAA policy has been to depict the location and height of low, close-in obstacles identified in FAA Order 8260.3B, Vol 4, paragraph, 1.3.1 Low, Close-In OCS Penetrations. These obstacles require a higher than standard climb gradient, but to a height not exceeding 200' above Departure End of Runway (DER) elevation. Further, these obstacles do not force the promulgation of higher than standard takeoff minimums enabling "see and avoid" procedures (ref: FAA Order 8260.46E, Table 2-1-1, Situation 2).

While well-intentioned, the publication of these low, close-in obstacle notes has resulted in a serious chart clutter issue on many Standard Instrument Departures (SIDs) and extensively long Takeoff Minimums & Obstacle Departure Procedures (ODP) entries on those runways with numerous close-in obstacles.

Section 5-2-8 of the Aeronautical Information Manual (AIM) furnishes the following guidance to pilots concerning low, close-in obstacles:

4. Obstacles that are located within 1 NM of the DER and penetrate the 40:1 OCS are referred to as "low, close-in obstacles." The standard required obstacle clearance (ROC) of 48 feet per NM to clear these obstacles would require a climb gradient greater than 200 feet per NM for a very short distance, only until the aircraft was 200 feet above the DER. To eliminate publishing an excessive climb gradient, the obstacle AGL/MSL height and location relative to the DER is noted in the "Take-off Minimums and (OBSTACLE) Departure Procedures" section of a given Terminal Procedures Publication (TPP) booklet. **The purpose of this note is to identify the obstacle(s) and alert the pilot to the height and location of the obstacle(s) so they can be avoided. This can be accomplished in a variety of ways, e.g., the pilot may be able to see the obstruction and maneuver around the obstacle(s) if necessary; early liftoff/climb performance may allow the aircraft to cross well above the obstacle(s); or if the obstacle(s) cannot be visually acquired during departure, preflight planning should take into account what turns or other maneuver may be necessary immediately after takeoff to avoid the obstruction(s).**

As stated in Order 8260.3B, these obstacles do not force higher than standard takeoff minimums. Therefore, it is questionable whether a pilot can actually see and avoid these obstacles immediately after takeoff, especially for certificated operators who may be departing using lower than standard takeoff minimums approved through OpSpecs.

Further, the AIM states that IFR departure procedures are “*based on the pilot crossing the departure end of the runway at least 35 feet above the departure end of runway elevation, climbing to 400 feet above the departure end of runway elevation before making the initial turn*” (ref: AIM 5-2-8 b1). Pilots might interpret the FAA’s guidance to consider “turns or other maneuvers” at low altitude (i.e., less than 400 feet above the DER) immediately after takeoff in marginal VMC or even IMC to avoid these obstacles, is contrary to the concept of no turn until reaching 400 feet above the runway, which is not what was intended and could be a safety risk if done so. The preferred option is for the pilot to plan to the initial takeoff climb performance to vertically clear any low, close-in obstacle(s) while complying with the recommendations against turns below 400 feet AGL.

An additional concern is that the publication of multiple low, close-in obstacles masks the presence of those obstacles that must also be published as result of the establishment of higher-than-standard takeoff minimums in lieu of complying with the published climb gradient for the departure. When higher than standard takeoff minimums are published as an option for use instead of applying the higher than standard climb gradient (FAAO 8260.46E, Table 2-1-1, Situation 3 or Situation 4), the obstacle(s) necessitating the higher takeoff minimums must be published. However, these obstacles(s) are often lost in the sea of low, close-in obstacle. These are obstacles that the pilot **must** “see and avoid” during the takeoff if they are unable to comply with the climb gradient.

Recommendations:

NBAA, with the support of other Industry partners, recommends that Order 8260.46 be amended to remove the requirement to publish the location of each individual or group of low, close in obstacles on SIDs and ODPs. In place of this requirement, we recommend that the “Takeoff Obstacle Notes” sections for the applicable 8260 Forms be changed to publish when low, close-in obstacles that are identified for a departure runway, document the existence of these obstacles along with the height of highest of these obstacles and the distance of the closest obstacle from the DER, as shown below:

Rwy 13, Low, close in obstacles beginning 1654' from DER, up to 61'AGL/1078' MSL.

Figure 1 depicts the current ODP entry for St. Cloud MN (STC) and the proposed change to the depiction of low, close-in obstacles. Figures 2a and 2b depict the current MOONY3 SID at San Jose, CA (SJC) and this chart with the proposed change.

In addition to reducing the complexity of the obstacle notes, attention is drawn to the obstacle(s) that must be visually avoided when using the higher than standard takeoff minimums in lieu of a higher than standard climb gradient (obstacle highlighted in red on the STC example – for reference in this document only - we are not suggesting red be used for publication). The revised note regarding low, close-in obstacles still furnishes the pilot with sufficient information for planning purposes to aid the pilot in vertically avoiding these obstacles.

No IACC changes are required to implement this recommendation.

If this recommendation is adopted, a revision to AIM, section 5-2-8, is also necessary to call attention to the change in the depiction of low-close-in obstacles and to emphasize that any obstacle that is specifically listed by type on the SID or ODP must be visually avoided if the pilot departs IFR using the higher than standard takeoff minimums. See Figure 3 for our recommended changes to the AIM. In addition, it is recommended that this change, if adopted, be thoroughly discussed in the next edition of the FAA Instrument Procedures Handbook and Instrument Flying Handbook.

NBAA believes that these changes will reduce clutter on SIDs and ODPs and call attention to the more critical obstacles, ones that must be seen and avoided using the higher than standard takeoff minimums.

Comments:

This recommendation affects the following:

1. FAA Order 8260-46, Departure Procedures
2. Aeronautical Information Manual 5-2-8
3. FAA-H-8083-3A, Instrument Flying Handbook
4. FAA-H-8261-1A, Instrument Procedures Handbook

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Date: 9/21/2015

Figure 1

St. Cloud, MN Takeoff Minimums & ODP – CURRENT:

ST. CLOUD, MN

ST. CLOUD RGNL (STC)

TAKEOFF MINIMUMS AND (OBSTACLE)

DEPARTURE PROCEDURES

ORIG 09239 (FAA)

TAKEOFF MINIMUMS: **Rwy 5**, 300-1¼ or std. w/ min. climb of 201' per NM to 1300 or alternatively, with standard TAKEOFF minimums and a normal 200'/NM climb gradient, TAKEOFF must occur no later than 1100' prior to DER.

NOTE: **Rwy 5**, tower 6201' from DER, 1416' left of centerline, 149' AGL/1179' MSL. Multiple trees beginning 17' from DER, 373' right of centerline, up to 59' AGL/1081' MSL. Multiple trees beginning 1752' from DER, 56' left of centerline, up to 80' AGL/1102' MSL.

Rwy 13, tree 1654' from DER, 884' right of centerline, 61' AGL/1078' MSL. Tree 1265' from DER, 794' left of centerline, 42' AGL/1059' MSL. **Rwy 23**, trees 2109' from DER, 29' right of centerline, up to 61' AGL/1082' MSL.

Trees 1725' from DER, 93' left of centerline, up to 55' AGL/1076' MSL. Fence 74' from DER, 216' left of centerline, 2' AGL, 1023' MSL. **Rwy 31**, terrain beginning 29' from DER, 50' right of centerline, up to 1083' MSL. Terrain beginning 107' from DER, 7' left of centerline, up to 1060' MSL.

St. Cloud, MN Takeoff Minimums & ODP – PROPOSED:

ST. CLOUD, MN

ST. CLOUD RGNL (STC)

TAKEOFF MINIMUMS AND (OBSTACLE)

DEPARTURE PROCEDURES

ORIG 09239 (FAA)

TAKEOFF MINIMUMS: **Rwy 5**, 300-1¼ or std. w/ min. climb of 201' per NM to 1300 or alternatively, with standard TAKEOFF minimums and a normal 200'/NM climb gradient, TAKEOFF must occur no later than 1100' prior to DER.

NOTE: **Rwy 5**, Low, close in obstacles beginning 17' from DER up to 80' AGL/1102' MSL. **Tower 6201' from DER, 1416' left of centerline, 149' AGL/1179' MSL.** **Rwy 13**, Low, close in obstacles beginning 1654' from DER, up to 61' AGL/1078' MSL. **Rwy 23**, Low, close in obstacles 74' from DER, up to 61' AGL/1082' MSL. **Rwy 31**, Low, close in obstacles beginning 29' from DER, up to 1083' MSL.

Figure 2a – MOONY3 SID SJC – Current:

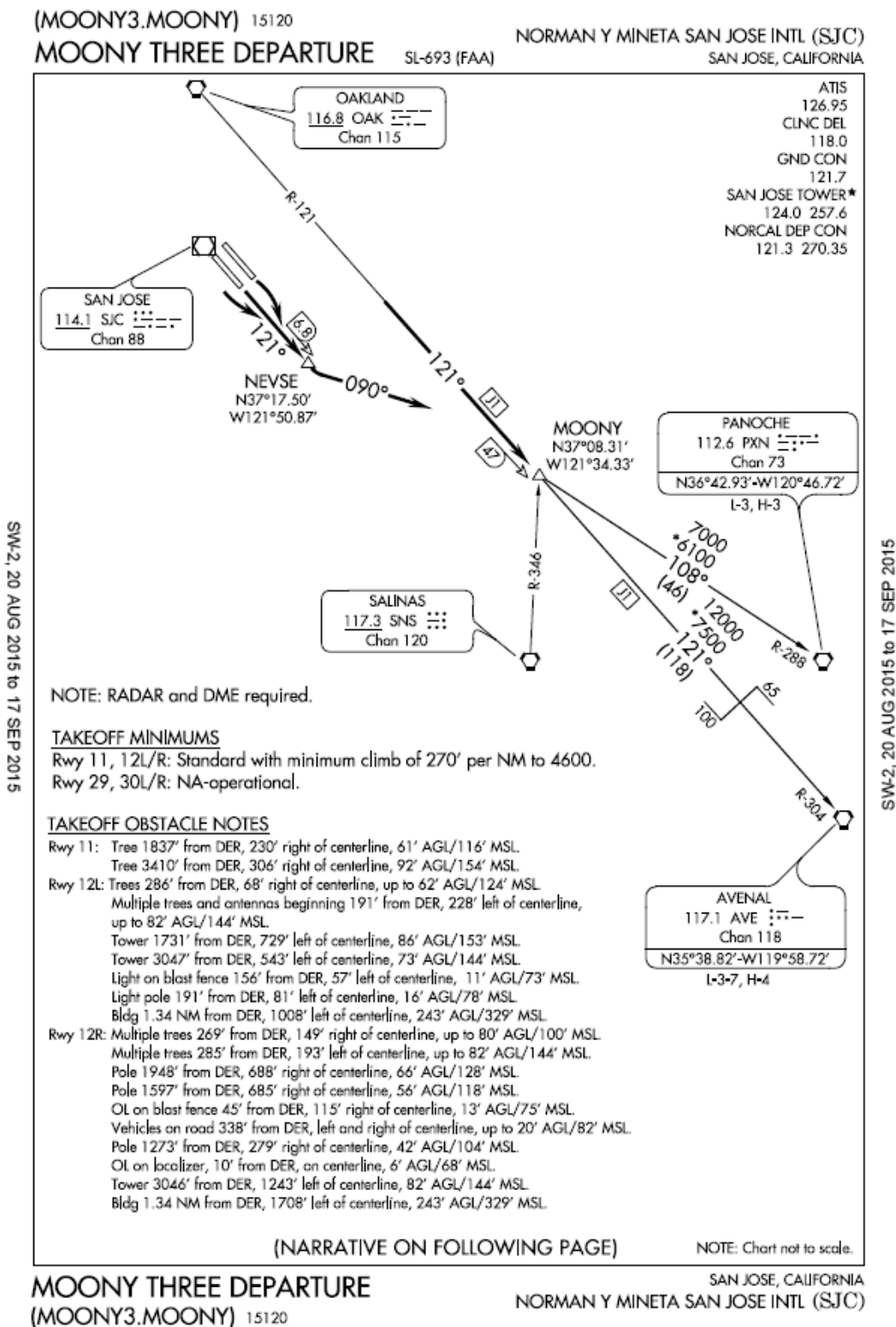


Figure 2b – MOONY3 SID SJC – Incorporating Proposed Change:

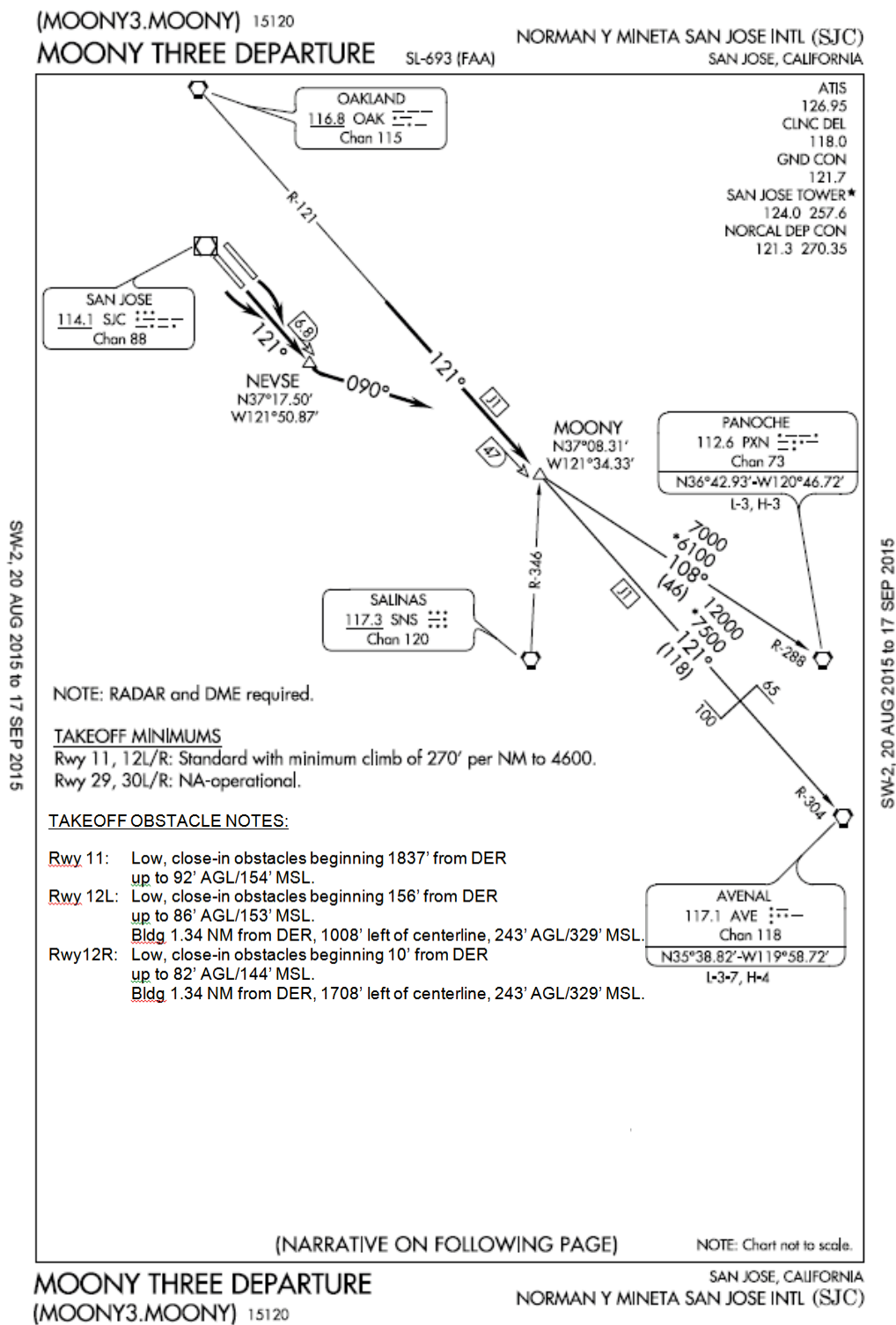


Figure 3 – Revised AIM 5-2-8 Guidance:

5-2-8. Instrument Departure Procedures (DP) – Obstacle Departure Procedures (ODP) and Standard Instrument Departures (SID)

4. Obstacles that are located within 1 NM of the DER and penetrate the 40:1 OCS are referred to as “low, close-in obstacles.” The standard required obstacle clearance (ROC) of 48 feet per NM to clear these obstacles would require a climb gradient greater than 200 feet per NM for a very short distance, only until the aircraft was 200 feet above the DER. In addition, these obstacles do not warrant the establishment of higher-than-standard takeoff minimums for that runway. To eliminate publishing an excessive climb gradient, obstacle AGL/MSL height and location relative to the DER is Low, close in obstacles are noted in the “Take-off Minimums and (OBSTACLE) Departure Procedures” section of a given Terminal Procedures Publication (TPP) booklet. The purpose of this note is to identify the presence of these obstacle(s) and alert the pilot as to their general height and location. ~~of the obstacle(s) so they can be avoided. This can be accomplished in a variety of ways, e.g., the pilot may be able to see the obstruction and maneuver around the obstacle(s) if necessary. may or if the obstacle(s) cannot be visually acquired during departure, preflight planning should take into account what turns or other maneuver may be necessary immediately after takeoff to avoid the obstruction(s).~~

Pilots should ensure that adequate performance exists that allows these obstacles to be cleared during the initial takeoff. This performance may be the result of additional height crossing the departure end of runway beyond the 35 feet expected crossing height, the result of sufficient climb performance, or a combination the two.

c. Who is responsible for obstacle clearance? DPs are designed so that adherence to the procedure by the pilot will ensure obstacle protection. Additionally:

1. Obstacle clearance responsibility also rests with the pilot when he/she chooses to climb in visual conditions in lieu of flying a DP and/or depart under increased takeoff minima rather than fly the climb gradient. Standard takeoff minima are one statute mile for aircraft having two engines or less and one-half statute mile for aircraft having more than two engines. Specified ceiling and visibility minima (VCOA or increased takeoff minima) will allow visual avoidance of obstacles until the pilot enters the standard obstacle protection area. Obstacles(s) that must be visually avoided when using the higher than standard takeoff minimums are listed in the Take-off Minimums and (Obstacle) Departure Procedures section of the U. S. Terminal Procedure booklet. The MSL height of the obstacle

and its height above the ground (AGL) at the obstacles' actual location is provided.

Obstacle avoidance is not guaranteed if the pilot maneuvers farther from the airport than the specified visibility minimum prior to reaching the specified altitude. DPs may also contain what are called Low Close in Obstacles. These obstacles are less than 200 feet above the departure end of runway elevation and within one NM of the runway end, and do not require increased takeoff minimums. These obstacles are identified on the SID chart or in the Take-off Minimums and (Obstacle) Departure Procedures section of the U. S. Terminal Procedure booklet. These obstacles are especially critical to aircraft that do not lift off until close to the departure end of the runway or which climb at the minimum rate. Pilots should also consider drift following lift-off to ensure sufficient clearance from these obstacles. That segment of the procedure that requires the pilot to see and avoid obstacles ends when the aircraft crosses the specified point at the required altitude. In all cases continued obstacle clearance is based on having climbed a minimum of 200 feet per nautical mile to the specified point and then continuing to climb at least 200 foot per nautical mile during the departure until reaching the minimum enroute altitude, unless specified otherwise.

RNAV Holding Working Group – Draft AIM & PCG Guidance on Holding

Note: Significant changes are in red, underlined text.

Proposed AIM Change:

5–3–8. Holding

a. Whenever an aircraft is cleared to a fix other than the destination airport and delay is expected, it is the responsibility of the ATC controller to issue complete holding instructions (unless the pattern is charted), an EFC time and best estimate of any additional en route/terminal delay.

NOTE–

Only those holding patterns depicted on U.S. government or commercially produced (meeting FAA requirements) low/high altitude enroute, and area or Departure Procedure/STAR charts should be used.

b. If the holding pattern is charted and the controller doesn't issue complete holding instructions, the pilot is expected to hold as depicted on the appropriate chart. When the pattern is charted, the controller may omit all holding instructions except the charted holding direction and the statement *AS PUBLISHED*; e.g., *HOLD EAST AS PUBLISHED*. Controllers must always issue complete holding instructions when pilots request them.

c. If no holding pattern is charted and holding instructions have not been issued, the pilot should ask ATC for holding instructions prior to reaching the fix. This procedure will eliminate the possibility of an aircraft entering a holding pattern other than that desired by ATC. If unable to obtain holding instructions prior to reaching the fix (due to frequency congestion, stuck microphone, etc.), then enter a standard pattern on the course on which the aircraft approached the fix and request further clearance as soon as possible. In this event, the altitude/flight level of the aircraft at the clearance limit will be protected so that separation will be provided as required.

d. When an aircraft is 3 minutes from a clearance limit and a clearance beyond the fix has not been received, the pilot is expected to start a speed reduction so that the aircraft will cross the fix, initially, at or below the maximum holding airspeed.

e. When no delay is expected, the controller should issue a clearance beyond the fix as soon as possible and, whenever possible, at least 5 minutes before the aircraft reaches the clearance limit.

f. Pilots should report to ATC the time and altitude/flight level at which the aircraft reaches the clearance limit and report leaving the clearance limit.

NOTE—

In the event of two-way communications failure, pilots are required to comply with 14 CFR Section 91.185.

g. When holding at a VOR station, pilots should begin the turn to the outbound leg at the time of the first complete reversal of the to/from indicator.

h. Patterns at the most generally used holding fixes are depicted (charted) on U.S. Government or commercially produced (meeting FAA requirements) Low or High Altitude Enroute, Area, [Departure Procedure](#), and STAR Charts. Pilots are expected to hold in the pattern depicted unless specifically advised otherwise by ATC.

NOTE—

Holding patterns that protect for a maximum holding airspeed other than the standard may be depicted by an icon, unless otherwise depicted. The icon is a standard holding pattern symbol (racetrack) with the airspeed restriction shown in the center. In other cases, the airspeed restriction will be depicted next to the standard holding pattern symbol.

REFERENCE—

AIM, Holding, Paragraph 5–3–8j2.

i. An ATC clearance requiring an aircraft to hold at a fix where the pattern is not charted will include the following information: (See FIG 5–3–2.)

1. Direction of holding from the fix in terms of the eight cardinal compass points (i.e., N, NE, E, SE, etc.).

2. Holding fix (the fix may be omitted if included at the beginning of the transmission as the clearance limit).

3. Radial, course, bearing, airway or route on which the aircraft is to hold.

4. Leg length in miles if DME or RNAV is to be used (leg length will be specified in minutes on pilot request or if the controller considers it necessary).

5. Direction of turn if left turns are to be made, the pilot requests, or the controller considers it necessary.

6. Time to expect further clearance and any pertinent additional delay information.

DRAFT

FIG 5-3-2
Holding Patterns

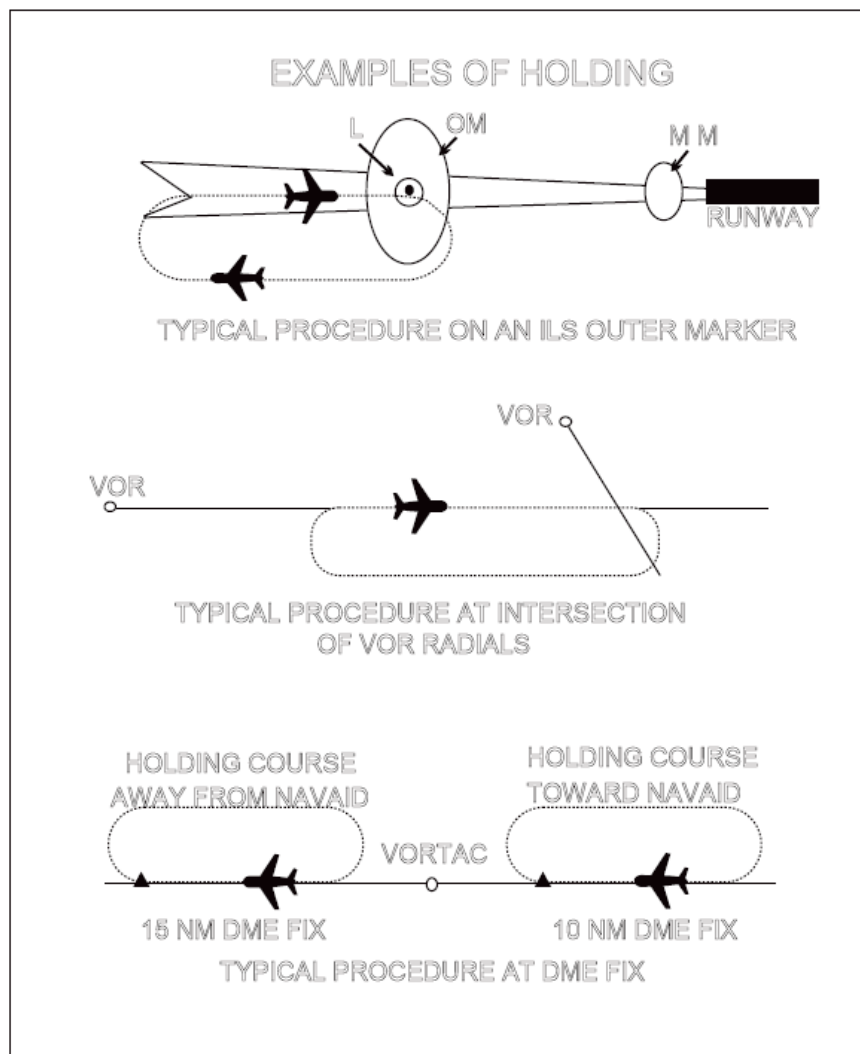
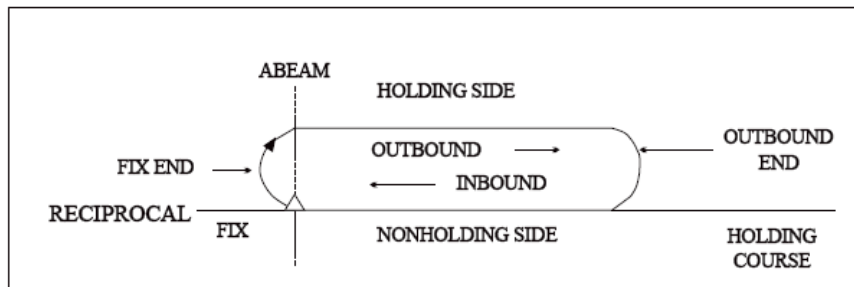


FIG 5-3-3
Holding Pattern Descriptive Terms



j. Holding pattern airspace protection is based on the following procedures.

1. Descriptive Terms.

(a) **Standard Pattern.** Right turns
(See FIG 5-3-3.)

(b) **Nonstandard Pattern.** Left turns

2. Airspeeds.

(a) Unless otherwise charted, the maximum holding airspeeds and the associated altitudes are shown in Table 5-3-1:

TBL 5-3-1

Altitude (MSL)	Airspeed (KIAS)
MHA - 6,000'	200
6,001' - 14,000'	230
14,001' and above	265

NOTE-

These are the maximum indicated airspeeds applicable to all holding. In fixed wing airplanes it is desirable to enter and conduct holding at the lowest practical airspeed consistent with the airplane's recommended holding speed. It is acceptable to allow RNAV systems to determine a recommended holding speed that is at or below the maximum holding speed. All aircraft, including helicopters, conducting holding should fly at speeds at or above 90 KIAS to minimize the influence of wind drift.

(b) The following are exceptions to the maximum holding airspeeds:

(1) Holding patterns from 6,001' to 14,000' may be restricted to a maximum airspeed of 210 KIAS. This nonstandard pattern will be depicted by an icon.

(2) Holding patterns may be restricted to a maximum speed. The speed restriction is depicted in parenthesis inside the holding pattern on the chart: e.g., (175).

(3) Holding patterns at USAF airfields only – 310 KIAS maximum, unless otherwise depicted.

(4) Holding patterns at Navy fields only – 230 KIAS maximum, unless otherwise depicted.

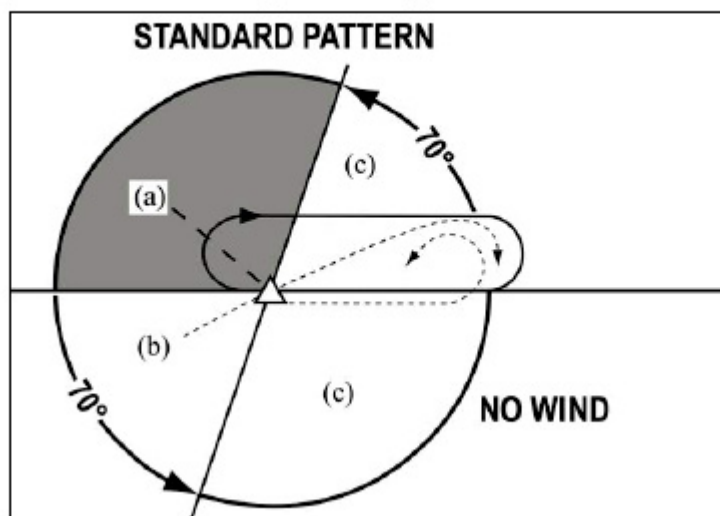
(5) When a climb-in hold is specified by a **published procedure** (e.g., “Climb-in holding pattern to depart XYZ VORTAC at or above 10,000.” or “All aircraft climb-in TRUCK holding pattern to cross TRUCK Int at or above 11,500 before proceeding on course.”), additional obstacle protection area has been provided to allow for greater airspeeds in the climb for those aircraft requiring them. Climb-in-holding is permitted up to a maximum airspeed of 310 KIAS unless a maximum holding airspeed is published, in which case that maximum airspeed is applicable. However, it is recommended the aircraft climb in the holding pattern at the slowest practical speed comensurate with safe maneuvering margin and adequate climb performance. The airspeed limitations in 14 CFR Section 91.117, Aircraft Speed, still apply.

(c) The following phraseology is used by ATC to advise a pilot of the maximum holding airspeed for a holding pattern airspace area.

PHRASEOLOGY–

(AIRCRAFT IDENTIFICATION) (holding instructions, when needed) MAXIMUM HOLDING AIRSPEED IS (speed in knots)

FIG 5-3-4
Holding Pattern Entry Procedures



3. Entry Procedures. Holding protected airspace is designed based in part on pilot compliance with the three recommended holding pattern entry procedures discussed below. Deviations from these recommendations coupled with excessive airspeed crossing the holding fix may in some cases result in the aircraft exceeding holding protected airspace. (See FIG 5-3-4.)

(a) Parallel Procedure. When approaching the holding fix from anywhere in sector (a), the parallel entry procedure would be to turn to a heading to parallel the holding course outbound on the nonholding side for one minute, turn in the direction of the holding pattern through more than 180 degrees, and return to the holding fix or intercept the holding course inbound.

(b) Teardrop Procedure. When approaching the holding fix from anywhere in sector (b), the teardrop entry procedure would be to fly to the fix, turn outbound to a heading for a 30 degree teardrop entry within the pattern (on the holding side) for a period of one minute, then turn in the direction of the holding pattern to intercept the inbound holding course.

(c) Direct Entry Procedure. When approaching the holding fix from anywhere in sector (c), the direct entry procedure would be to fly directly to the fix and turn to follow the holding pattern.

(d) While other entry procedures may enable the aircraft to enter the holding pattern and remain within protected airspace, the parallel, teardrop and direct entries are the procedures for entry and holding recommended by the FAA and were derived as part of the development of the size and shape of the obstacle protection areas for holding.

e. Nonstandard Holding Pattern. Fix end and outbound end turns are made to the left. Entry procedures to a nonstandard pattern are oriented in relation to the 70 degree line on the holding side just as in the standard pattern.

4. Timing.

(a) Inbound Leg.

(1) At or below 14,000 feet MSL: 1 minute.

(2) Above 14,000 feet MSL: 1 1/2 minutes.

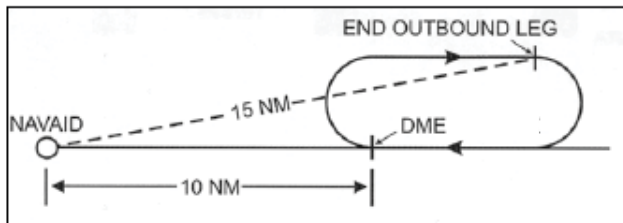
NOTE—

The initial outbound leg should be flown for 1 minute or 1 1/2 minutes (appropriate to altitude). Timing for subsequent outbound legs should be adjusted, as necessary, to achieve proper inbound leg time.

(b) Outbound leg timing begins *over/abeam* the fix, whichever occurs later. If the abeam position cannot be determined, start timing when turn to outbound is completed.

5. Use of Distance Measuring Equipment (DME). DME holding is subject to the same entry and holding procedures except that distances (nautical miles) are used in lieu of time values. The outbound course of the DME holding pattern is called the outbound leg of the pattern. The controller or the instrument approach procedure chart will specify the length of the outbound leg. The end of the outbound leg is determined by the DME readout. The location of the holding fix on conventional procedures, or controller defined holding based on a conventional navigation aid with DME, is based on slant range distance to the NAVAID. The specified course or radial and distances are from the DME station for both the inbound and outbound ends of the holding pattern. (See FIG 5-3-6 and FIG 5-3-7)

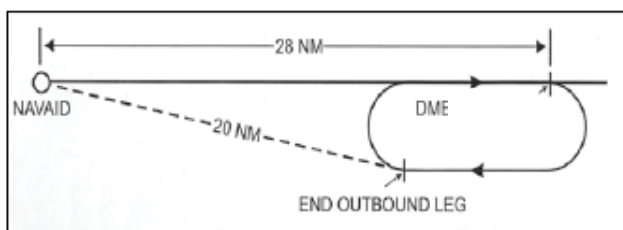
FIG 5-3-5
Inbound Toward NAVAID



NOTE—

When the inbound course is towards the NAVAID, the fix distance 10 NM, and the leg length is 5 NM, then the end of the outbound leg will be reached when the DME reads 15 NM.

FIG 5-3-6
Inbound Leg Away from NAVAID



NOTE—

When the inbound course is away from the NAVAID, the fix distance 28 NM, and the leg length is 8 NM, then the end of the outbound leg will be reached when the DME reads 20 NM.

FIG 5-3-7
GPS/RNAV Holding

Deleted

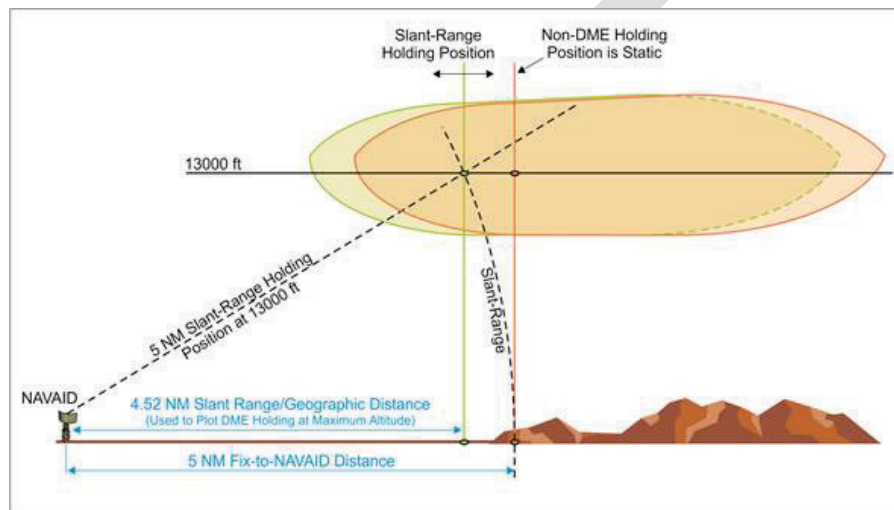
6. Use of RNAV Distance in lieu of DME Distance. Substitution of RNAV computed distance to or from a NAVAID in place of DME distance is permitted when holding. However, the actual holding location will be further from the navaid than designed due to the lack of slant range in the position solution (See FIG 5-3-7). This may result in slight difference between RNAV distance readout in reference to the NAVAID and the DME readout, especially at higher altitudes.

REFERENCE –

AIM, Use of Suitable Area Navigation (RNAV) Systems on Conventional Procedures and Routes, Section 1-2-3

FIG 5-3-7

Difference Between DME Distance From NAVAID & RNAV Computed Distance From NAVAID



7. Use of RNAV Guidance and Holding. RNAV systems, including multisensor Flight Management Systems (FMS) and stand-alone GPS receivers, may be used to furnish lateral guidance when executing a hold. The manner in which holding is implemented in an RNAV system varies widely between aircraft and RNAV system manufacturers. Holding pattern data may be extracted from the RNAV database for published holds or may be manually entered for ad-hoc ATC-assigned holds. Pilots must be familiar with the capabilities and limitations of the specific RNAV system used for holding.

(a) All holding, including holding defined on an RNAV or RNP procedure, is based on the conventional NAVAID holding design criteria, including the holding protected airspace construction. Minor difference between the design track and the track flown by the RNAV system are expected when RNAV guidance is used to execute holding. Individually, these differences do not appreciably affect ability of the aircraft to remain within holding pattern protected airspace. However, cumulatively, they can result in deviations sufficient to result in excursions up to limits of the holding pattern protected airspace, and in extreme circumstances beyond protected airspace. The following considerations apply when an RNAV system furnishes the lateral guidance used to fly a holding pattern:

(1) Many systems use ground track angle instead of heading to select the entry method. While the holding pattern design allows a 5 degree tolerance, this may result in an unexpected entry when the winds induce a large drift angle.

(2) The holding protected airspace is based on the assumption that the aircraft will fly-over the holding fix upon initial entry. RNAV systems may execute a “fly-by” turn when approaching the holding fix prior to entry. A “fly-by” turn during a direct entry from the holding pattern side of holding course may result in excursions beyond protected airspace, especially as the intercept angle and ground speed increase.

(3) During holding, RNAV systems furnish lateral steering guidance using either a constant bank or constant radius to achieve the desired inbound and outbound turns. An aircraft’s flight guidance system may use reduced bank angles for all turns including turns in holding, especially at higher altitudes, that may result in exceeding holding protected airspace. If the flight guidance system’s bank angle limit feature is pilot-selectable, a minimum 25 degree bank angle should be selected regardless of altitude unless aircraft operating limitations specify otherwise and the pilot advises ATC.

(4) RNAV systems apply the database coded or pilot-entered leg distance as a maximum length of the **inbound** leg to the holding fix. The system varies the outbound leg distance as necessary to ensure that the maximum length of the inbound leg is not exceeded. This often results in a turn to the inbound leg beyond the design turn point (See FIG 5-3-8). With a strong headwind against the outbound leg, RNAV systems may fly up to and possibly beyond the limits of protected airspace before turning inbound. (see FIG 5-3-9). This is especially true at higher altitudes where wind speeds are greater and ground speed results in a wider holding pattern.

FIG 5-3-8
RNAV Lateral Guidance and Holding – No Wind

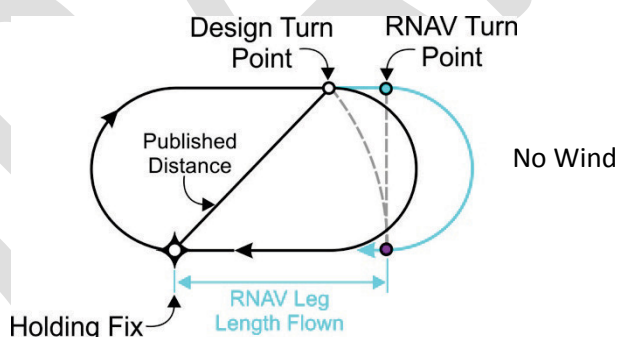
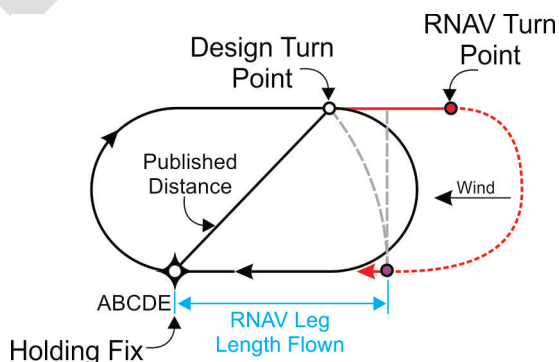


FIG 5-3-9
RNAV Lateral Guidance and Holding – Effect of Wind



(5) Some RNAV systems compute the holding pattern based on the aircraft's altitude and speed at a point prior to entering the hold. If the indicated airspeed is not reduced to comply with the maximum holding speed before this point, the computed pattern may exceed the protected airspace. Loading or executing a holding pattern may result in the speed and time limits applicable to the aircraft's current altitude being used to define the holding pattern for RNAV lateral guidance. This may result in an incorrect hold being flown by the RNAV system. For example, entering or executing the holding pattern above 14,000' when intending to hold below 14000' may result in applying 1 ½ minute timing below 14000'.

NOTE-

Some systems permit the pilot to modify leg time of a holding patterns defined in the navigation database, for example an HILPT. In most RNAV systems, the holding pattern time remains at the pilot-modified time and will not revert back to the coded time if the aircraft descends to a lower altitude where a shorter time interval applies.

(b) RNAV systems are unable to alert the pilot for excursions outside of holding pattern protected airspace since the dimensions of this airspace are not included in the navigation database. In addition, the dimensions of holding pattern protected airspace vary with altitude for a charted holding pattern, even when the hold is used for the same application. Close adherence to the pilot actions described in this section reduce the likelihood of exceeding the boundary of holding pattern protected airspace when using RNAV lateral guidance to conduct holding.

(c) Holding patterns may be stored in the RNAV system's navigation database and include coding with parameters defining how the RNAV system will conduct the hold. For example, coding will determine whether holding is conducted to manual termination (HM), continued holding until the aircraft reaches a specified altitude (HA), or holding is conducted until the holding fix is crossed the first time after entry (HF). Some systems do not store all holding patterns, and may only store patterns associated with missed approaches and hold-in-lieu of procedure turn (HILPT). Some store all holding as standard patterns and require pilot action to conduct non-standard holding (left turns).

(1) Pilots are cautioned that multiple holding patterns may be established at the same fix. These holding patterns may differ in respects to turn directions and leg lengths depending on their application as an enroute holding pattern, a holding pattern charted on a SID or STAR, or when used on an instrument approach procedure. Many RNAV systems limit the database coding at a particular fix to a single holding pattern definition. Pilots extracting the holding pattern from the navigation database are responsible for confirming that the holding pattern conforms to the assigned charted holding pattern in terms of turn direction, speed limit, timing, and distance.

(2) If ATC assigns holding that is not charted, then the pilot is responsible for programming the RNAV system with the assigned holding course, turn direction, speed limit, leg length, or leg time.

(3) Changes made after the initial execution may not apply until the next circuit of the holding pattern if the aircraft is in close proximity to the holding fix.

8. Pilot Action.

(a) Speed. When ATC furnishes advance notice of holding, start speed reduction to be at or below the maximum holding speed allowed at least 3 minutes prior to crossing the holding fix. If advance notice by ATC is not provided begin speed reduction as expeditiously as practical.

(1) Aircraft must enter holding at or below the maximum holding speed established in Section 5-3-8 j 2 (a). It is desirable to enter and conduct holding at the lowest practical airspeed consistent with the airplane's recommended or RNAV system's computed holding speed. All aircraft, including helicopters, conducting holding should fly at speeds at or above 90 KIAS to minimize the influence of wind drift.

(2) It is acceptable to allow RNAV systems to determine an appropriate deceleration point prior to the holding fix and to manage the speed reduction to the RNAV computed holding speed. If the pilot does not permit the RNAV system to manage the deceleration from the computed point, the actual hold pattern size at holding entry may differ from the holding pattern size computed by the RNAV system.

(3) Advise ATC immediately if unable to comply with the maximum holding airspeed and request an alternate clearance.

NOTE-

Speeds above the maximum or published holding speed may be necessary due to turbulence, icing, etc. Exceeding maximum holding airspeed may result in aircraft excursions beyond the holding pattern protected airspace. Pilot should advise ATC that they cannot accept the assigned hold.

(b) Bank Angle. For holding **not involving** the use RNAV systems, make all turns during entry and while holding at:

- (1) 3 degrees per second; or
- (2) 30 degree bank angle; or
- (3) 25 degree bank provided a flight director system is used.

NOTE-

Use whichever requires the least bank angle.

(4) When using RNAV lateral guidance to conduct holding, do not use flight guidance system bank angle limiting functions unless the feature is not pilot-selectable, required by the aircraft limitations, or it use is necessary to comply with the aircraft's minimum maneuvering speed margins. Holding pattern protected airspace is based on 25 degrees of bank at all altitudes. Use of a shallower bank angle will expand both the width and length of the aircraft track, especially as wind speed increases. If unable to achieve the required bank, advise ATC and request additional area for holding. Bank angle limit feature must never be used when conducting a HILPT course reversal maneuver or a "climb-in-holding" holding pattern used on departure procedures or a missed approach procedure.

(c) Compensate for wind effect primarily by drift correction on the inbound and outbound legs. When outbound, triple the inbound drift correction to avoid major turning adjustments; for example, if correcting left by 8 degrees when inbound, correct right by 24 degrees when outbound.

(d) Determine entry turn from aircraft heading upon arrival at the holding fix; +/-5 degrees in heading is considered to be within allowable good operating limits for determining entry. When using RNAV lateral guidance for holding, it is permissible to allow the system to compute the holding entry.

(e) RNAV lateral guidance may execute a fly-by turn beginning at an excessively large distance from the holding fix. Reducing speed to the maximum holding speed at least 3 minutes prior to reaching the holding fix and using the recommended 25 degree bank angle will reduce potentials excursions beyond protected airspace.

(f) When RNAV guidance is used for holding, pilots should be prepared to intervene if the turn from outbound leg to the inbound leg does not begin within a reasonable distance of the charted leg length, especially when holding is used as a course reversal hold-in-lieu-of-procedure-turn (HILPT). Pilot intervention is not required when ATC-assigned holding pattern that is not charted. However, notify ATC when the outbound leg length becomes excessive when RNAV guidance is used for holding.

k. When holding at a fix and instructions are received specifying the time of departure from the fix, the pilot should adjust the aircraft's flight path within the limits of the established holding pattern in order to leave the fix at the exact time specified. After departing the holding fix, normal speed is to be resumed with respect to other governing speed requirements, such as terminal area speed limits, specific ATC requests, etc. Where the fix is associated with an instrument approach and timed approaches are in effect, a procedure turn must not be executed unless the pilot advises ATC, since aircraft holding are expected to proceed inbound on final approach directly from the holding pattern when approach clearance is received.

l. Radar surveillance of holding pattern airspace areas.

1. Whenever aircraft are holding, ATC will usually provide radar surveillance of the holding airspace, on the controller's radar scope.

2. The controller will attempt to detect any holding aircraft that stray outside the holding airspace and will assist any detected aircraft to return to the assigned airspace.

NOTE—

Many factors could prevent ATC from providing this additional service, such as workload, number of targets, precipitation, ground clutter, and radar system capability. These circumstances may make it unfeasible to maintain radar identification of aircraft to detect aircraft straying from the holding pattern. The provision of this service depends entirely upon whether controllers believe they are in a position to provide it and does not relieve a pilot of their responsibility to adhere to an accepted ATC clearance.

3. ATC is responsible for traffic and obstruction separation when they have assigned holding that is not associated with a published (charted) holding pattern. Altitudes assigned will be at or above the minimum vectoring or minimum IFR altitude.

4. If an aircraft is established in a published holding pattern at an assigned altitude above the published minimum holding altitude and subsequently cleared for the approach, the pilot may descend to the published minimum holding altitude. The holding pattern would only be a segment of the IAP *if* it is published on the instrument procedure chart and is used in lieu of a procedure turn.

m. For those holding patterns where there are no published minimum holding altitudes, the pilot, upon receiving an approach clearance, must maintain the last assigned altitude until leaving the holding pattern and established on the inbound course. Thereafter, the published minimum altitude of the route segment being flown will apply. It is expected that the pilot will be assigned a holding altitude that will permit a normal descent on the inbound course.

Proposed Pilot/Controller Glossary Change:

ALONG-TRACK DISTANCE (ATD)– The distance between the fix and the abeam point of the aircraft projected to the desired track measured in a horizontal plane by systems using area navigation reference capabilities that are not subject to slant range errors.

Charting Group

**Government/Industry Aeronautical Charting Forum (ACF)
Meeting 15-02**

October 27 – 29, 2015

USGS HQ

**12201 Sunrise Valley Drive
Reston, VA 20192**

CHARTING GROUP AGENDA

- I. OPENING REMARKS**
- II. REVIEW MINUTES OF LAST MEETING, ACF 15-01**
- III. AGENDA APPROVAL**
- IV. PRESENTATIONS, ACF WORKING GROUP REPORTS, ACF PROJECT REPORTS**

ICAO / IFPP Committee Report	Mike Webb, FAA/AFS-420
PARC PBN Procedure Naming & Charting	Mike Webb, FAA/AFS-420
Airport GIS	Dr. Mike McNerney, FAA/AAS-100
Discontinuation of VOR Services	Leonixa Salcedo, FAA /AJM-324
National Route Strategy / PBN Implementation Process FAA Order 7100.41	Robert Novia, FAA/AJV-14 Bruce Kinsler, FAA/AJV-142
VFR Chart Print Schedule Realignment and Synchronization	Rick Fecht, FAA/AJV-522
NOTAM Briefing	Ernie Bilotto, FAA/AJR-B11
Publish Electronic Form of MVA Charts	Radar Video Maps, FAA/AJV-536
Transportation Airplane Performance Planning Update	Bruce McGray, FAA/AFS-410

V. OUTSTANDING CHARTING TOPICS

Forum Number	Description Summary	Submitter
07-01-195	Charting & A/FD Information Re: Class E Surface Areas Status: Paul Gallant, FAA/AJV-113	NBAA
13-01-261	Alaska Ground Based Transceivers (GBT) Locations Status: Valerie Watson, FAA/AJV-553	Jim Hill FAA/AJM-2323
13-01-262	Airport Facility Directory (A/FD) Depiction of Traffic Pattern Altitudes Status: Mike Wallin, FAA/AJV-5331	Randy Collier Michigan DOT
13-01-266	Standardized Depiction of Altitude Restrictions on Bottom, Top and Maintain Altitudes on Standard Terminal Arrival (STAR) and Standard Instrument Departures (SIDs) Status: Valerie Watson, FAA/AJV-553 and Tom Schneider, FAA/AFS-420	Jim Arrighi FAA/AJV-141
13-01-270	Stepdown Fix Chart Notes Status: Kevin Bridges, FAA/AIR-131	Kevin Bridges FAA/AIR-131
14-01-274	Solar Power Plant Ocular Hazard Symbol on Aeronautical Charts Status: Mike Wallin, FAA/AJV-5331	FAA Western Services Center Operations Support Group
14-01-276	Removal of Non-Alaska Facility Information from Alaska Supplement Status: Mike Yorke, FAA/AAL-ANC-FSDO-03	Marshall G. Severson FAA
14-01-277	Discontinuation of World Aeronautical Chart (WAC) Status: Eric Freed, FAA/AJV-52	FAA Aeronautical Information Services
14-01-279	Naming of FAA Certified, National Disseminated AWOS-3 Systems on Private Use Airports Status: Mike Wallin, FAA/AJV-5331	Regina H. Sabatini FAA
14-02-280	MEA Usage on SIDs Status: Tom Schneider, FAA/AFS-420	John Collins GA Pilot
14-02-282	VASI PAPI Differences Status: Brad Rush, FAA/AJV-54	John Collins GA Pilot

Forum Number	Description Summary	Submitter
14-02-283	Charting of Transmission Lines on VFR Charts Status: LCDR McLaughlin, USCG	Christopher Hill USCG
14-02-284	DME Facilities – Charting and MAGVAR Issues Status: Dale Courtney, Stand Alone DME Work Group Chair, FAA/AJW-292	Leo Eldredge Tetra Tech
15-01-289	Adding “CPDLC” Information to Airport Diagram and Terminal Procedures and Updating the AFD Status: Gregg Anderson, FAA/AJM-34, Mike Wallin, FAA/AJV-5331, Valerie Watson, FAA/AJV-553, and Rich Boll, NBAA	David Cherry DataComm
15-01-290	VFR Charting of Airport Symbol – Services Availability Status: Rick Fecht, FAA/AJV-5223 and Valerie Watson, FAA/AJV-553	Randy L. Collier State of Michigan, MDOT – Aeronautics
15-01-292	Removal of Grid Variation from U.S. IAP Charts Status: Kevin Bridges, FAA/AIR-131 and Mike Yorke, FAA/AAL-ANC-FSDO-03	Steve Jackson FAA
15-01-293	STAR Terminus Point Standardization Status: Valerie Watson, AJV-553 and Tom Schneider, FAA/AFS-420	Lev Prichard Allied Pilots Association
15-01-295	Charting Airports for the Minimum Operating Network (MON) Status: Vince Massimini, MON Workgroup Chair, MITRE	VOR MON Program FAA

VI. NEW CHARTING TOPICS

Forum Number	Description	Submitter
15-02-296	Charting of Unmanned Free Balloon Activities and Amateur Rocket Activity Areas Briefer: Paul Eure, FAA/AJV-113	Paul Eure FAA/AJV-113
15-02-297	Charting of HILPT Maximum Holding Altitude Briefer: Rich Boll, NBAA	Rich Boll NBAA
15-02-298	Charting GLS DMax (Service Volume) Briefer: Ron Renk, United Airlines	Ron Renk United Airlines
15-02-299	Add INOP Components Minimums Adjustment to IAPs Briefer: John Collins, ForeFlight	John Collins ForeFlight
15-02-300	Standardize Depiction of Communications on DPs and STARs Briefer: Allison Maliszewski, FAA/AJV-5612	FAA Aeronautical Information Services

V. NEXT MEETINGS

ACF 16-01 is scheduled for April 26-28, 2016, hosted by ALPA, Herndon, VA.

ACF 16-02 is scheduled for October 25-27, 2016, hosted by TBD, TBD.

Government/Industry Aeronautical Charting Forum (ACF)

**Meeting 15-01
Charting Group
April 29-30, 2015
Pragmatics, Inc.
Reston, VA 20190**

CHARTING GROUP MINUTES

I. Opening Remarks

The Aeronautical Charting Forum (ACF) was hosted by Pragmatics, Inc. at their location in Reston, VA. Valerie Watson, AJV-553, opened the Charting Group portion of the forum on Wednesday, April 29. Valerie acknowledged ACF Co-chair Tom Schneider, AFS-420, who presided over the Instrument Procedures Group (IPG) portion of the Forum the previous day. Valerie also expressed appreciation to Pragmatics, Inc. and Pragmatics, Inc. representative Steven VanCamp for hosting the 15-01 ACF.

II. Review Minutes of Last Meeting, ACF 14-02

The minutes from ACF 14-02 meeting were distributed electronically last fall via the AeroNav ACF website: http://www.faa.gov/air_traffic/flight_info/aeronav/acf/. The minutes were accepted as submitted with no changes or corrections.

III. Agenda Approval

The agenda for the 15-01 meeting was accepted as presented.

IV. Presentations, ACF Working Group Reports and ACF Project Reports

ICAO/IFPP Committee Report

Mike Webb, AFS-420 and advisor to the U.S. Delegation to the ICAO Instrument Flight Procedures Panel (IFPP), provided an update on the ICAO/IFPP Committee activities and an overview of the key topics of the ICAO/IFPP Integration Working Group (IWG), [see Slide #3](#).

Mike discussed the ongoing debate regarding the titling of procedures based on GBAS ([See Slide #4](#)). Six States, including the U.S., title GBAS procedures GLS, and 1 state, Spain, titles their procedures GBAS. Various GBAS charting examples were shown ([See Slides 5-6](#)). Mike then reviewed the actions taken to address GBAS terminology ([See slides 7 – 9](#)). The U.S. delegation is looking into how the U.S. can align GBAS terminology with the GLS definition, including the possibility of renaming of GLS procedures GBAS.

Mike briefly discussed Fixed Radius Transitions (FRT) and the work being done to amend ICAO Annexes 4, 11 and 15. The FAA is not planning on implementing FRT.

Mike then discussed the charting issues related to the use of conventional NAVAIDs on PBN procedures. Work is being done to standardize the depiction of information shown when NAVAIDs are utilized as waypoints.

Other charting topics currently being discussed by the working group are listed on [slides 13-15](#).

ACTION: Mike Webb, AFS-420, will provide an update at the next ACF.

PARC PBN Procedure Naming and Charting

Mike Webb, AFS-420, provided an update on the Performance Based Operations Aviation Rulemaking Committee (PARC) Performance Based Navigation (PBN) Procedure Naming Action Team activities since the last ACF. Mike reviewed the PARC recommendations that the Action Team agreed upon and have forwarded to the FAA. The recommendations state that PBN procedures in the U.S. will retain “RNAV” in the procedure title despite the fact that ICAO will be adopting “RNP” in the title. The recommendations also state that PBN procedures will only include a single navigation specification shown in parentheses in the procedure title. Every PBN procedures will also contain a PBN Requirements Box depicted in the briefing strip portion of the chart.

Mike then discussed the inclusion and make-up of the PBN Requirements Box for instrument approaches. The Action Team (AT) discussions regarding the PBN Requirements focused on where on an instrument approach chart the box would appear, the content and sequence of the content within the box, and recommended abbreviations and acronyms used within the box. Mike showed several examples of the recommended depiction ([Slides 10, 12, 18 and 20](#)).

Mike then discussed issues related to chart titling and use of different chart title parentheticals ([Slides 23, 25 and 27](#)).

John Collins, GA Pilot, inquired if such procedures would be expanded to the GA community to utilize. Mike replied that training will be need by the GA community as a whole in order to be able to utilize such procedures. John then inquired as to when the aviation community can anticipate seeing the first charts with PBN requirement boxes. Mike replied that the goal is to have everything in place by 2022.

ACTION: Mike Webb, AFS-420, will provide an update at the next ACF.

Airport GIS

Dr. Mike McNerney, AAS-100, provided an update on the progress made on the FAA Airports GIS program. Since the last ACF, several new developments have taken place ([See Slides 5 – 7 for complete details](#)):

- The Surface Analysis and Visualization Tool (Airport 20:1 Tool) is now live to all Service Centers. Education efforts are ongoing via Webinar to all centers on how to utilize the 20:1 Tool.
- The Airports GIS web site (URL: www.airports-gis.info) is now live and updates are provided quarterly.
- The Airports GIS Cloud server is live and includes aerial photography with the goal of 1000 airports by September. 1600 legacy ALP files have been uploaded to the cloud server.
- Part 139 airport signage diagrams have been uploaded to the cloud server.
- Airports can do self-analysis of data uploaded to the cloud service, enabling a more pro-active means to providing and insuring accurate data.

John Collins, GA Pilot, inquired as to whether the public and interested airport stakeholders could access the airport data. Dr. McNerney replied that AAS-100 can only release information to the FAA and Government agencies. He explained that AJV-5 would be responsible for release of the data and added that currently individual airports have the means to give permission to individuals to access their specific airport data. Several members of the audience expressed their displeasure at the lack of public accessibility. Dr. McNerney said that he would look into the possibility of public access to some of the airport GIS data.

Dr. McNerney stated that FAA Airport Planners were unsatisfied with the systems inability to print out detailed Airport Layout Plans (ALPs). He reported that this issue is being worked on and that six of the eight standard sheets of the ALP set should be available via print by June 2015 and the remaining two would be available via print in FY 2016.

Dr. McNerney stated that it is still the intent of the FAA to establish the Airports GIS to become the authoritative source for airport data by 30 September 2015. However, this date is only the initial operating capability. There will be a period of additional testing until April 2016 before it goes into production.

Delta Air Lines expressed their desire to have access to the airport GIS data to enable their engineering teams to develop and maintain engine out procedures. Others in the audience echoed Delta's desire to have access to the data. Dr. McNerney acknowledged the need for such access for engine out procedures and stated that there has been some work on trying to establish a tool specifically for engine out procedures, but reiterated that the Office of Airports is not authorized to publicly disseminate the data.

Dr. McNerney commented on several new Documents that were officially released since last ACF ([See Slide #11](#)).

Justin Nahlik, NGA, inquired if Surface Movement Guidance Control System (SMGCS) data would be collected and stored in Airports GIS. Dr. McNerney stated that SMGCS data would be collected and the Airports GIS Database would eventually serve as the central repository for the data.

ACTION: AAS-100, will provide an update at the next ACF.

Discontinuation of VOR Services

Leonixa Salcedo, AJM-324, briefed the issue. Leonixa [gave an overview](#) of the VOR MON program and a status report since the last ACF. She reviewed the progress made to date on identifying VORs that may be decommissioned. She pointed out to the audience a significant change in the number of VORs expected to be decommissioned. Previously, it had been reported that approximately 50% of all the VORs in the NAS would be decommissioned. That estimation has been readjusted to just over 33% (approximately 308).

Leonixa stated that since the last ACF, the criteria for decommissioning VORs has been developed by the FAA and MITRE. Discussions have also taken place between the FAA and the DoD, during which the military emphasized that their operational requirements within the NAS require that fewer VORs be decommissioned.

Leonixa explained that the VOR MON program will be on a 10 year timeline of two phases, with the decommissioning of approximately 308 VORs total. The first phase goes from 2016-2020 and removes 100 VORs. The second phase goes from 2021-2025 and removes the remaining 208 VORs. In the short term, Leonixa stated that a list of VORs initially selected for decommissioning will be released to the public sometime in 2015.

John Collins, GA Pilot, inquired about flight testing the 77 NM Standard Service Volume (SSV) for VORs. Dale Courtney, AJW-292, commented that the initial testing data and feedback is promising.

John Moore, Jeppesen, asked how many airports would be designated as MON Airports. Leonixa stated that the plan is for 145 MON Airports. (See New Topic: RD 15-01-295, Charting of Airports in the MON)

Rich Boll, NBAA, asked how the discontinuation of VOR services would impact Class II Navigation capabilities along the coast of the U.S. Leonixa stated that there would be some impact, but more often than not, VOR services along the coast would see an improvement with the higher SSV. Rich emphasized that NBAA remains concerned about any loss of Class II Navigation along the coast.

ACTION: Leonixa Salcedo, AJM-324, will provide an update the next ACF.

National Route Strategy / PBN Implementation Process FAA Order 7100.41

No update provided.

ACTION: Robert Novia, AJV-14, to provide an update at the next ACF.

VFR Chart Print Schedule Realignment and Synchronization

Rick Fecht, AJV-5223, briefed the issue. Rick stated that an internal study group was formed and is currently working on how to implement the change in print schedule. The study is due to be completed by the start of next fiscal year. Rick will provide an update on progress made at next ACF.

ACTION: Rick Fecht, AJV-5223, to provide an update at the next ACF.

NOTAM Briefing

Lynette Jamison, AJR-B11, [briefed the issue](#). Lynette discussed the ongoing transition of the FAA NOTAM system to the Federal Notam System (FNS), an ICAO compliant NOTAM system. The goal is to harmonize the NOTAM system and for it to be fully converted to the ICAO based system by 2020. The NOTAM office is working with various stakeholders to gain feedback and input on the new system.

Lynette discussed how the budget of the NOTAM office is changing. The new model requires the proponent office in the FAA to fund their requested changes to the system. This change took place in January 2015.

Lynette will provide updates as warranted during the course of the transition of the NOTAM system.

Military Unmanned Aircraft Procedures

CW4 Mark Burrows, U.S. Army, [provided a detailed brief](#) on the testing and development work within the U.S. Department of Defense and the U.S. Army for establishment and integration of Military Unmanned Aircraft Vehicles (UAVs) flights into the NAS.

CW4 Burrows discussed the testing conducted by the military and presented several examples of UAV Instrument Approach Procedures produced by NGA for military use. After the simulator and live flight tests, they found that with standardized procedures that match manned aviation as much as possible, there was no significant impact on the NAS. In the end, the goal is for NGA to produce standardized UAV charts to be available in digital format and intended solely for military use.

EFAS/Flight Watch/Clearance Delivery Changes

No update provided.

ACTION: Steve Villanueva, AJR-B, to provide an update at the next ACF.

V. Outstanding Charting Topics

07-01-195 Charting & AFD Information Re: Class E Surface Areas

Paul Gallant, AJV-113, reviewed the issue. Paul stated that the Aeronautical Information Manual (AIM) Chapter 3 changes have been submitted and are scheduled for publication December 2015. Paul commented that the AIM guidance was expanded regarding the specifics of Class E airspace and associated extensions when an airport's traffic control tower closes. Work continues to be done on the revision and updating of airspace legal descriptions. Paul will follow up and process revised airspace descriptions as they are received from the Service Areas.

STATUS: OPEN

ACTION: Paul Gallant, AJV-113, to report on publication of revised AIM guidance.

ACTION: Paul Gallant, AJV-113, to report back on the work done to update airspace legal descriptions.

09-01-214 Low Visibility Operations/SMGCS (LVO SMGCS) Taxi Charts (Previously title as SMGCS Taxi Charts)

Bruce McGray, AFS-410, [reviewed the history](#) of LVO SMGCS. Bruce stated that currently, the FAA is not charged with the production of SMGCS charts. He conceded that the FAA does have a responsibility to provide accurate and current SMGCS data, though he admitted that funding for collection & dissemination of the data is not yet available. Bruce added that the work being done by Airports GIS to database LVO/SMGCS information will hopefully help make the data available in the near future.

Bruce discussed the work currently being done to create a set of standardized symbols to be submitted to ICAO.

Valerie suggested that this issue can be closed in the ACF since the FAA does not currently have any plans to produce SMGCS charts.

Ted Thompson, Jeppesen, expressed his support of the efforts made by the FAA with regard to sourcing SMGCS data. He stated that he is fine with closing the issue until such time as the FAA plans to produce SMGCS charts.

Rich Boll, NBAA, requested a clarification of the FAA's future plans to produce SMGCS charts. Valerie re-stated that there are currently no plans for the FAA to produce SMGCS charts, but that this may change in the future. Rich then expressed that if/when SMGCS operations fall under Part 135, NBAA would likely bring the issue of SMGCS charts back to the ACF-CG.

STATUS: CLOSED

[11-01-238 Aerobatic Area Symbols on VFR Sectional Chart](#)

Mike Wallin, AJV-5331, briefed the issue. Mike stated that AFS-800 has determined that there are 173 Aerobatic Training Areas (ATAs) that warrant publication on VFR charts. AFS-800 is still working to finalize the data and forward it to NFDC so that publication can begin. Mike also stated that since the last ACF, the VFR charting team has developed a symbol for the depiction of ATAs on VFR charts. The new symbol will be placed in the approximate center of the area where operations are conducted. It is planned that supporting detailed Aerobatic Training Area information will be published in the Notices section of the Airport/Facility Directories (AFD) as well as a standard note in the airport entry.

Valerie Watson, AJV-553, stated that the IACC Requirement Document for the proposed symbol has been prepared and is ready to be presented to the MPOC.

Mike stated that once the specification for the symbol is in place, an incremental implementation will begin. Mike is working with Bob Carlson, AJV-5641, and Rick Fecht, AJV-5223, on the implementation plan.

Ted Thompson, Jeppesen, inquired as to when this information will be databased in NASR. Mike stated that initially, the locations will be published in the NFDD as add-on pages. NASR is being updated to create a Miscellaneous Activity Area section that will house these areas, Ultralight Activity Areas, Glider Activity Areas, etc. Once this is complete, ATAs will be entered into NASR.

STATUS: CLOSED

[13-01-261 Alaska Ground Based Transceivers \(GBT\) Locations](#)

Valerie Watson, AJV-553, briefed the issue. Valerie stated that she has been in contact with Maureen Cummings-Spickler, AGC-520, the attorney in FAA General Counsel assigned to the ADS-B program. Ms. Cummings-Spickler informed Valerie that she is working both the ACF request and a Freedom of Information Act (FOIA) request for release of ADS-B locations. Valerie restated that there is no intent for the FAA to chart this information, however she will continue to try to obtain the release of the data and will report back at the next ACF.

Valerie and Bob Carlson, AJV-5641, have both reached out to the Alaska Regional Office on the potential of establishing ADS-B coverage graphics. A response has yet to be received.

Lynette Jamison, AJR-B11, commented that the NOTAM office is working with relevant offices within the FAA on generating a NOTAM process to inform pilots in the event of a GBT outage.

STATUS: OPEN

ACTION: Valerie Watson, AJV-553, to report back on her discussions with FAA Legal regarding the release of ADS-B tower locations.

13-01-262 Airport Facility Directory (AFD) Depiction of Traffic Pattern Altitudes

Valerie Watson, AJV-553, reviewed the issue. Mike Wallin, AJV-5331, stated that NFDC is still working this issue. Valerie asked Mike if there is a new policy to collect all Traffic Pattern Altitude (TPA) data, whether standard or not, and populate the information in NASR. Mike was not sure if that policy was in place and committed to looking into the issue further and reporting at the next ACF.

STATUS: OPEN

ACTION: Mike Wallin, AJV-5331, to report on progress in population of all Traffic Pattern Altitudes in NASR.

13-01-266 Standardized Depiction of Altitude Restrictions on Bottom, Top and Maintain Altitudes on Standard Terminal Arrival (STAR) and Standard Instrument Departures (SIDs)

Tom Schneider, AFS-420, briefed the issue. Tom stated that the interim guidance for publication of Top Altitudes on Standard Instrument Departures (SIDs) has been published via memo until FAA Order 8260.46F is released. The publication of Top Altitudes on SIDs is being implemented.

Tom reported that the issue of publication of Bottom Altitudes on Arrivals is still being worked in the Climb/Descend Via Workgroup. Tom reported that there are some complicated aspects to bottom altitudes, both with the overall policy and with individual procedures – these issues are being worked. It has been determined that there will be no limit on the number of Bottom Altitudes that can be depicted on a STAR procedure. Bottom Altitudes may be related to transitions, airports, aircraft type, direction or runway. Also see new agenda item 15-01-293, STAR Terminus Point Standardization.

Tom also reported that the Bottom Altitude language has been incorporated into Draft FAA Order 8260.19G, and that AFS-400 is in the process of resolving comments received.

STATUS: OPEN

ACTION: Tom Schneider, AFS-420, to provide an update on the Bottom Altitude guidance in FAA Order 8260.19G.

ACTION: Valerie Watson, AJV-553, to draft an IACC Requirement Document to support the charting of Bottom Altitudes on STARs and to create prototype STAR charts.

[13-01-267 Addition of ATC Radar Telephone Number in FAA AFD](#)

Gary Fiske, AJV-82, reviewed the issue and stated that there is still no consensus in ATC to publish phone numbers. Gary expressed ATC's concern that allowing public access to the numbers could potentially lead to the numbers being used inappropriately.

Valerie Watson, AJV-553, commented that since the last ACF, a few CLNC DEL phone numbers have [appeared in the AFD airport entry](#) in the COMM/NAV/WEATHER REMARKS section. These numbers were submitted by individual facilities to NFDC, published in NASR & pulled into the AFD. This suggests that at least some ATC facilities are willing to release their own information, but does not constitute an overall ATC policy. Gary stated that if ATC senior management decides to establish a consensus policy *against* the publication of phone numbers, this information may need to be removed from the AFD.

Rich Boll, NBAA, emphasized the complexity and time sensitive issues for pilots obtaining clearances, especially in busy and complex airspace like Chicago. Rich voiced that obtaining a clearance directly from the controller by phone can save time for both the pilot and for ATC.

There was consensus to close the topic given ATC's unwillingness at this time to do a wholesale release of phone numbers. Gary stated that with the upcoming Flight Service responsibility/services changes, it may be that ATC will adopt a phone number release endeavor, but that is yet to be known.

Rich stated that given the consensus to close the item, NBAA will work directly with each Center to request that they provide telephone numbers to NFDC for ultimate publication in the AFD.

STATUS: CLOSED

[13-01-268 Making Alternate Missed Approach Text Accessible to ATC](#)

Gary Fiske, AJV-82, provided an update on actions taken since last ACF. Gary stated that after taking the suggestion of Brad Rush, AJV-54, at the last ACF, he tried to use the suggested website to look up procedure source documents. It was found that the website was difficult to navigate, the documents not easily accessible and therefore is not seen as a viable solution for ATC to access alternate missed approach information. Gary stated that either the ACF needs to go back to the original recommendation that the Alternate Missed Approach text be published in the front matter of the TPP or this issue should be closed.

Valerie Watson, AJV-553, stated that Aeronautical Information Services (AIS), will not publish the Alternate Missed Approach text in the front matter of the TPPs.

Tom Schneider, AFS-420, asked if the FAA Form 8260-3 is being distributed per the guidelines in FAA Order 8260.19F. It was not clear if the guidelines were being followed, and if they were being followed, who within the different ATC facilities was getting the information. Valerie agreed to investigate the whether the distribution process is being followed. It will then be up to the facility to ensure the controllers have that information readily available.

It was decided to close the item for now given that there is no charting solution. NBAA stated that they will likely revisit the topic after further consultation with ATC and other entities within the FAA.

STATUS: CLOSED

[13-01-270 Stepdown Fix Chart Notes](#)

Kevin Bridges, AIR-131, provided an update. Kevin stated that activity on this topic is ongoing within the US-IFPP and that they will determine whether the guidance needs to be revised or expanded. Current policy regarding the publication/charting of stepdown fix notes remains unchanged until further notice.

STATUS: OPEN

ACTION: Kevin Bridges, AIR-131, will report at the next ACF.

[14-01-274 Solar Power Plant Ocular Hazard Symbol on Aeronautical Charts](#)

Valerie Watson, AJV-553, reviewed the topic. Rick Fecht, AJV-5223, [showed the new](#), more prominent charting depiction of Ocular Hazards on FAA VFR charts. The revised depiction was well received by the audience.

Valerie asked about the source of the ocular hazard data. Rick stated that the requests to date have come in via special request from the Western Service Center and the areas are not currently databased in NASR.

Ted Thompson, Jeppesen, stated that if these hazards are not sourced through NASR, they will not appear on any commercial charts.

Mike Wallin, AJV-5331, stated that he would look into how Ocular Hazards could be databased in NASR. In the short term, they can be published as a NFDD add-on page.

STATUS: OPEN

ACTION: Mike Wallin, AJV-5331, will investigate the databasing of Ocular Hazards in NASR.

[14-01-276 Removal of Non-Alaska Facility Information from Alaska Supplement](#)

Valerie Watson, AJV-553, reviewed the issue. Bob Carlson, AJV-5641, reported that his team is close to completing the task of resolving the AFD/AK Supplement discrepancies forwarded to his team by Lynette Jamison, AJR-B1, following the previous ACF.

Mike York, AAL-03, commented that in his discussions with Alaskan aviation groups, including AOPA, they decided that they would like to see the majority of the non-Alaskan information in the Supplement removed. Mike stated that of the 129 non-Alaskan airports listed in the Supplement, only 17 airports should

remain. He also said that the non-Alaska military information would remain in the supplement. Mike will send the proposed list of non-Alaskan information slated for removal to Bob Carlson, but no action will be taken.

Valerie pointed out that at the last ACF, AOPA voiced strong support for retaining the current non-Alaskan information in the Supplement. AOPA was not in attendance at the current ACF.

STATUS: OPEN

ACTION: Mike York, AAL-03, to supply non-Alaskan material identified for removal to Bob Carlson, AJV-5461.

ACTION: AOPA will be provided an opportunity to non-concur with Mike York's proposal at the next ACF.

[14-01-277 Discontinuation of World Aeronautical Charts](#)

Rick Fecht, AJV-5223, reviewed the topic. Rick reported that the Federal Register Notice to address the proposal to discontinue the WACs has yet to be released. The Notice is still under review by FAA Legal, but it is anticipated that it will be released soon. Until the Federal Register Notice is published and comments are received, disposition of the WAC charts remains on hold.

STATUS: OPEN

ACTION: Rick Fecht, AJV-5223, will report back on the Federal Register Notice at next ACF.

[14-01-278 Alaska Designated Common Traffic Advisory Frequency Area Chart Depictions](#)

Rick Fecht, AJV-5223, reviewed the topic. Rick [presented examples](#) of the revised charting of the Alaskan CTAF areas on the Anchorage chart inset. The sectional chart now includes a text box to direct users to the CTAF area inset.

Mike York, AAL-03, praised the work done by the Visual Charting team. Mike reported that the response he has received back from chart users in Alaska has been positive.

STATUS: CLOSED

[14-01-279 Naming of FAA Certified, National Disseminated AWOS-3 Systems on Private Use Airports](#)

Valerie Watson, AJV-553, reviewed the issue. There was no update available on the progress made on the publishing of FAA Order 7350.9.

Valerie asked Tom Schneider, AFS-420, if the 8260.19 policy needs to be changed to support use of stand-alone AWOS location identifiers in remote weather system notes on IAPs. Valerie presented an example of

the note as it is currently published. Tom agreed that he will have to look into revising the guidance when establishment & publication of stand-alone automated weather systems has been finalized.

Ted Thompson, Jeppesen, asked how stand-alone weather systems will be published. Mike Wallin, AJV-5331, will look into the publication of these systems and report at the next ACF. It was noted that Stand Alone AWOS-3 systems are already in use and are currently published in the AFD.

STATUS: OPEN

ACTION: Mike Wallin, AJV-5331, to report back on incorporation of stand-alone weather systems in FAA Order 7350.9.

ACTION: Mike Wallin, AJV-5331, to investigate how and when stand-alone weather systems will be published in NASR.

14-02-280 MEA Usage on SIDs

Tom Schneider, AFS-420, provided an update. Tom stated that he has written guidance for Draft FAA Order 8260.46F that will ensure that MEAs will not be raised to support ATC altitudes. The Order is currently in draft form and internal coordination has begun.

John Collins, General Aviation Pilot, asked Tom if the same revision will be applied to the STAR order. Tom stated that he would look at placing the same type of guidance in Draft Order 8260.19G for STAR application.

STATUS: OPEN

ACTION: Tom Schneider, AFS-420, to report on proposed revision of the FAA Order 8260.46 guidance on the use of MEAs on Departures and to review the STAR Order 8260.19G to see if the same revision should be applied to Arrivals.

14-02-281 Publish Electronic Form of MVA Charts

Valerie Watson, AJV-553, briefed the topic. Valerie stated that since the last ACF, AIS has established a new public website where MVA charts are published as non-geo-referenced PDFs.

URL: http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/mva_mia/mva/

Ted Thompson, Jeppesen, commented that the pilot community would prefer to see the MVA charts as a geo-referenced overlay on an electronic chart. Rich Boll, NBAA, echoed Ted's comments and inquired as to when the geographic coordinate data for the shape files would be made available.

Valerie responded that the FAA was pursuing the publication of geo-referenced graphics but that no specific timeline had been established. She reiterated that line files, admittedly difficult to work with, of the

geographic coordinates are still available and may be procured by contacting Fred Milburn, AJV-56, via email at Fred.Milburn@faa.gov.

ACF consensus was to close the agenda item and move it to a briefing topic. A representative from AIS, Air Traffic Support Team will provide a briefing at the next ACF to update the progress on the release of geo-referenced graphics.

STATUS: CLOSED

[14-02-282 VASI PAPI Differences](#)

Valerie Watson, AJV-553, briefed the issue. Valerie stated that Brad Rush, AJV-54, had taken the issue to the FAA office of Lighting Systems, which is responsible for Order 6850.2B governing Visual Guidance Lighting Systems. That office responded that changing the PAPI distance to 4 NM would be very costly because it would require that all existing PAPIs be resurveyed for compliance. Brad asked if the VASI could be changed to 4 SM. The Lighting Systems Office responded that they would have to do some research to look at the impacts of this change.

STATUS: OPEN

ACTION: Brad Rush, AJV-54, to report on his continued discussions with the Lighting Systems Office.

[14-02-283 Charting of Transmission Lines on VFR Charts](#)

Rick Fecht, AJV-5223, provided an update on the actions taken by Visual Charting since last ACF. Rick stated that the VFR Charting team evaluated the impact of changing the transmission line depiction. He reported that it would take over 10,000 man-hours to manually change the transmission line depiction on all VFR charts. Rick emphasized to the audience that the current charting process is manual and such a large change is not feasible at this time.

LCDR Brian McLaughlin, USCG, [restated his opinion](#) that the current FAA transmission line depiction should be revised to enable pilots to more readily discern transmission lines from other items charted. It is his belief that if the depiction on the charts was easier to discern and interpret, pilots would be more likely to identify & avoid the hazard.

Valerie Watson, AJV-553, stated that utilizing the current manual charting process, the Visual Charting team does not have resources available to make the requested change to the charts. Valerie added that the FAA will reconsider the issue once the Visual Charts have been fully automated. Valerie stated that a business case for changing the symbology is difficult to defend as no data has been submitted to AIS to support the claim that the depiction of the lines have been a causal factor in this or similar accidents. She pointed out that the Coast Guard Investigative Report of the accident that precipitated this recommendation stated 16 causal factors for the incident, none of which were related to chart depiction of the transmission lines. Among the listed contributing factors for the subject incident were: "failure to comply with established

altitude restrictions and policy regarding low-level flight”; “lack of adequate aeronautical hazard marking on the power transmission lines” (meaning the markers on the wires, not the charts); “apparent decision of the PIC to divert CG 6017 from its flight path to overfly a Coast Guard surface asset at a low altitude”. The report stated “The Sanctuary altitude restriction is reflected in the Seattle Visual Flight Rules (VFR) Sectional Chart.” and “The power transmission lines were appropriately depicted on the Seattle VFR Sectional Chart”. The representatives from the USCG acknowledged the FAA’s position. LCDR McLaughlin responded that the USCG would conduct research to find if there is concrete data linking the FAA chart depiction of transmission lines to accidents of this type. This issue remains open pending LCDR McLaughlin’s findings.

STATUS: OPEN

ACTION: LCDR McLaughlin, USCG, to provide accident/incident report findings linking transmission line chart symbology to accident incidence.

14-02-284 DME Facilities – Charting and MAGVAR Issues

Dale Courtney, AJW-292 and Chair of the DME Workgroup, [briefed the topic](#). He stated that the initial DME Workgroup meeting has taken place and a number of issues were discussed. Dale stated that the scope of the VOR MON program is to decommission an estimated 308 VORs by 2025. The program will also investigate the addition of DMEs for RNAV use to fill in coverage gaps. Dale reported that NASR can accommodate DMEs in the database as a NAVAID type, but that they will not be published as such until charting standards are established.

Leo Eldridge, Contract Support, AJM-324, stated that approximately 2000 VOR/DME procedures will be impacted. Leo asked if the remaining DME would be charted on those amended procedures after the VOR has been decommissioned. Dale responded that yes, those DMEs would still be charted if still utilized as part of the procedure. Dale acknowledged that more work is needed to understand the full impact on VOR/DME procedures.

Vince Massimini, MITRE, asked if DMEs would be charted if they were not being used as part of an approach or as a part of establishing a fix or waypoint? Vince added that pilots will want to be able to compare what they are seeing in their FMS to the charted procedure. Dale stated that DMEs that support conventional uses will be charted because their use will be identified on FAA Form 8260-2. DMEs that only support RNAV use will not be charted, but will be databased in NASR. Valerie Watson, AJV-553, added that DME facilities used as waypoints on RNAV procedures will be charted as DMEs as per the existing charting hierarchy principle.

John Collins, GA Pilot, stated that if some DMEs are only in the database, then pilots will not be able to call up individual, uncharted DMEs to use as a means of triangulating distances to establish positions. He asked that if the DME is there, why can’t it be charted? Valerie stated that any DME used as a make-up of an enroute fix would be charted, but that those only used for RNAV backup would likely not be charted because they would be of limited use to a limited number of pilots. Chart clutter concerns regarding depiction of all DMEs were voiced by a number of audience participants. Dale mentioned the possibility of a “don’t chart” flag in the database to ensure the intent is clear.

It was identified that there needs to be a discussion with avionic manufacturers to ensure that the presence in the FMS and lack of chart depiction of DMEs doesn't have any detrimental impact. Kevin Bridges, AIR-131, will investigate.

The DME Workgroup is made up of the following individuals:

DME Workgroup		
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Kevin Bridges	Kevin.bridges@faa.gov	202-385-4627

STATUS: OPEN

ACTION: The DME Workgroup will continue to meet to discuss the issues and Dale Courtney, AJW-292, will report.

[14-02-286 Airport Diagram Symbol for Non-Standard Runway Holding Position Marking in Conjunction with a Hot Spot](#)

Valerie Watson, AJV-553, reviewed the history of the issue and provided an update of actions taken since last ACF. Valerie stated that the charting specifications have been updated to allow a non-typical runway hold location in conjunction with a hot spot to be depicted on airport diagrams.

STATUS: CLOSED

VI. New Charting Topics

[15-01-289 Adding “CPDLC” Information to Airport Diagram and Terminal Procedures and Updating the AFD](#)

Greg Anderson, AJM-34, briefed the topic. The FAA has recently begun implementing Controller Pilot Data Link Communication (CPDLC) into the NAS. CPDLC provides a digital communication between pilots and ATC for clearances, instructions and traffic flow management. Over the next two years, CPDLC will be rolled out to 56 towers. Greg provided a [detailed presentation](#) on how the system works.

Greg reviewed the ACF recommendation which proposes that CPDLC services be indicated with the airports communication information on the airport diagram, IAPs, and in the AFD. Valerie Watson, AJV-553, asked if CPDLC was still in test phase or certified for use? Greg responded that currently, the system is in test phase at Memphis and Newark, but will soon be active at the two test airports. Soon thereafter, the system will be incrementally implemented to more airports and will be fully commissioned and functional.

Greg stated that initially, users will log in to the system using the subject airport’s ICAO location identifier (“KMEM”). In the later phase of deployment, access to CPDLC will be through the identifier “KUSA” for all airports. This will be explained in AIM guidance.

Valerie also asked Greg if the subscription service needed to utilize CPDLC was free or a paid service. Greg responded that the CPDCL service is free. He stated that in order for aircraft to be able to access and utilize CPDLC service, the aircraft have to be outfitted with the appropriate FANS 1/A capable equipment.

Discussion ensued as to how these and other digital communication services are currently [published on the charts](#), e.g., D-ATIS, and how they should be depicted in the future. The question was raised if there should be a listing of digital services available at a given airport and on which products they would best be published. Valerie stated that she would look into how D-ATIS is currently being charted. She queried the audience as to where and on what charts this information should be published. Consensus was that the presence of CPDLC should be shown in the comm data block of charts on which CLNC DEL is currently published and that the details of specific services (DCL, D-TAXI, D-HZWXR) should be listed in the AFDs. She inquired of Greg that since the logon would be explained in AIM guidance, does the location identifier need to appear on the chart. Greg agreed that it did not need to be on the charts, but that in the initial phases it might be helpful to add it to the AFD entries. Once the logon for all services at all airports is KUSA, the individual logon idents can be removed.

Valerie stated that she will work on charting specifications for publication of CPDLC, but that the data must be sourced through conventional means (NASR). NFDC needs to investigate how to incorporate digital communications into NASR. Mike Wallin, AJV-5223, agreed to look into both a short term NASR solution (possibly referenced remarks “CPDLC: DCL LOGON KMEM” in the comm data resource) and a long term solution (a separate digital comm data resource with specific dropdown services). Greg stated that the Data Link office, AJM-34, can provide D-ATIS, PDC, and CPDLC data to NFDC for entry into NASR. Valerie made clear that only commissioned systems (NOT test or those in trial phase) should be submitted to NFDC for publication. Rich Boll questioned whether Terminal Weather Information for Pilots (TWIP) services should also be included in this list.

The question was raised as to whether CPDLC services could be announced via NOTAM as a means to help announce establishment of CPDLC services at an airport until the information is published on the charts and in the supplements. Lynette Jamison, AJR-B11, said yes, the establishment of a new CPDLC system could be announced via NOTAM. Greg stated that AJM-34 can send a list of commissioned systems to the NOTAM office.

STATUS: OPEN

ACTION: Mike Wallin, AJV-5331, will investigate how NFDC can publish the digital communication information in the short term and also look into the long term solution of adding a digital communications field to the NASR database.

ACTION: Greg Anderson, AJM-34, will supply a list of commissioned D-ATIS, PDC, and CPDLC systems to NFDC.

ACTION: Greg Anderson, AJM-34, will work with Lynette Jamison, AJR-B11, on the release NOTAMs for commissioned CPDLC locations.

ACTION: Valerie Watson, AJV-553, will draft an IACC Requirement Document for the depiction of CPDLC on all applicable charts.

ACTION: Rich Boll, NBAA, to investigate the use of TWIP to determine if it should be charted along with the other digital communications.

15-01-290 VFR Charting of Airport Symbol – Services Availability

Rich Fecht, AJV-5223, briefed the issue. Rick reviewed the Recommendation Document on behalf of the proponent who is requesting a revision of the definition of the charted VFR airport symbol that indicates services are available at a given airport. The current practice is to use tick marks around the airport symbol to indicate that fuel is available and the field attended Monday through Friday from 10h00 to 16h00, local time. Today, many airports have self-service fuel so there is no longer a need for an attendant to be present. The proponent recommends that the minimum requirement for services available should be changed to fuel is available (self-service or via attendant) 24 hours/day.

John Moore, Jeppesen, asked the pilots in the audience if General Aviation pilots go to the airport for services other than fuel that require someone to be in attendance at the airport. The response was yes, pilots go to airports for maintenance but that the item of key interest to them was whether an airport has fuel available.

A general consensus from the ACF attendees was that since fuel availability is the primary concern, the FAA should revise the criteria as per the recommendation. It was agreed that the proposed new requirement for showing the ticks should be that fuel is available Monday through Friday, 10 AM to 4 PM and that airport attendance no longer be a requirement.

Lynette Jamison, AJR-B11, stated that the proponent of this item should reach out to the state inspectors to let airports know how they can get fuel availability shown at their airport.

STATUS: OPEN

ACTION: Valerie Watson, AJV-553, to reach out to AOPA regarding the proposed change to the definition of airport symbols with tick marks on VFR charts.

ACTION: Rick Fecht, AJV-5223, to contact the proponent and recommend that he reach out to the state inspectors to let airports know how they can get fuel availability shown at their airport.

ACTION: Valerie Watson, AJV-553, and Rick Fecht, AJV-5223, to draft an IACC specification change regarding the proposed change to the definition of airport symbols with tick marks on VFR charts.

15-01-291 Charting and Evaluation of Climb Gradient

Gary McMullin, Southwest Airlines, presented the new Recommendation to the ACF. Gary reviewed the request, stating that pilots find it difficult to determine if they can meet the climb gradients required on specific departure procedures. It is proposed that a maximum climb gradient be published on the chart based on an ATC restriction or a TERPS requirement. He also proposes that all climb gradients that exceed 500 ft/NM should be evaluated.

Gary [reviewed multiple examples](#) of older SIDs where a climb gradient was explicitly provided and a newer SID that requires the pilot to evaluate and calculate a climb gradient for each segment of the departure route. He pointed out that the process is time consuming and is potentially hazardous if the pilot calculates a segment climb gradient incorrectly. Gary pointed out in his examples instances where the climb gradient on a given segment exceeds 500ft/nm, which depending upon aircraft weight and air temperature, some aircraft are able to fly.

Discussion shifted to whether this is currently a charting issue or an issue pertaining to criteria. Valerie Watson, AJV-553, stated that the Terminal Charting Team is not authorized to conduct calculations and publish the gradients and can only publish what is provided on the FAA Form 8260-15B source document. She stated that if climb gradients are specified for charting on the source document, they will be charted.

Rich Boll, NBAA, stated that NBAA had previously shared their concerns on climb gradients during the last review of FAA Order 8260.46. Rich stated that he believes that there does need to be some type of scrutiny of ATC altitude restrictions. He suggested that maybe this could be pursued through the PARC or the TAPP.

Gary voiced his opinion that something should be done in the interim while these issues are being worked out. He suggested that a hold be placed on the establishment of any Departure with a climb gradient over 500 ft/NM and the reevaluation of those already established.

Tom Schneider, AFS-420, stated that these ATC driven crossing altitude restrictions must be analyzed for feasibility during the initial SID development stage. Working collaboratively with the local ATC facility, local operators, and lead carriers, pre-publication coordination should catch these issues well beforehand to prevent unrealistic ATC driven crossing altitudes from ever being published.

Rich then shifted the discussion to his presentation from the TAPP Working Group. Rich stated that the TAPP is working on issues related to compliance with climb gradients. The TAPP has created a draft Information for Operators (InFO). The purpose of the InFO is to be able to provide aircraft operators and pilots information on how to comply with the climb gradients on SIDS, ODPs and missed approach procedures. The language of the InFO is still under discussion, but the TAPP Group is anticipating its release in the coming months.

Consensus was to close this item in the Charting Group and work it in the PARC VNAV Action Team. In the future, it can be brought back to the IPG for recommended changes to Order 8260.46.

STATUS: CLOSED

[15-01-292 Removal of Grid Variation from U.S. IAP Charts](#)

Tom Schneider, AFS-420, briefed the issue on behalf of the submitter, Steve Jackson. Tom stated that there is currently a requirement to chart both magnetic and grid variation on approach procedures above 67 degrees North latitude. Tom pointed out that the USAF and USN no longer teach grid variation in their instrument pilot training and that the Canadians do not use grid variation on their instrument charting products. Ted Thompson, Jeppesen, also noted that Jeppesen does not show grid variation on any of their products.

Tom recommends that the requirement to chart grid variation be removed from the FAA charting specifications. Tom asked the audience if they use grid variation or know of any pilots who do. No one in the audience claimed to use grid variation.

Kevin Bridges, AIR-131, stated the proposal was circulated around the Alaskan Airman's Association, Alaskan Air Carriers Association, PBFA, and the DoD Policy Board on Federal Aviation. Kevin recommended that the ACF hold off on making a decision until those groups have a chance to respond to the proposal. Mike York, AAL-03, offered to also reach out to the Center and give them the opportunity to respond.

TSgt Sarah O'Brien, USAF – AFFSA, voiced that she would like to see the charting guidance remain in the IACC specifications in case the military needs to utilize it. Valerie responded that the IACC specifications are standardized guidance for the construction of FAA charts. If the requirement for grid charting on FAA approaches is no longer necessary, the guidance must be removed from IACC 4, though of course the military is free to retain the information in their version of the specification.

STATUS: OPEN

ACTION: Kevin Bridges, AIR-131, to report back on the feedback from Alaskan associations and groups.

ACTION: Mike York, AAL-03, to reach out to Anchorage Center and report back.

15-01-293 STAR Terminus Point Standardization

Lev Prichard, APA, [briefed the issue](#). Lev described complications encountered when Standard Terminal Arrivals (STARs) do not terminate smoothly into an instrument approach. One of the complications is when the Arrival terminus fix altitude does not agree with that of the Approach IAF, IF or feeder altitude. Lev reviewed several examples where an altitude discrepancy exists between an Arrival procedure and the subsequent Approach. Lev recommended that criteria needs to be revised to ensure the altitudes coincide.

Lev also recommended that runway identifiers be added in the planview of Arrival charts in proximity to the terminal fix to which they apply. Valerie Watson, AJV-553, commented that runway identifiers associated with transitions/terminal fixes are published in the note form taken directly from the procedure source document. She commented that if runway identifiers were specified for charting at given terminus points on the source document, they would be charted there, but cautioned that on many charts significant congestion may occur due to the limited size of the pre-composed paper charts. Valerie then stated that for these charting changes to happen, changes would first have to be made to the procedure source documents. The runway identifiers are currently identified in note form on the source and so are shown that way on the charts.

Delta Air Lines representatives asked that if Approach IAFs were added to each STAR that link to an approach, wouldn't that also add chart clutter? Lev replied that it would actually add less clutter to a STAR and it would aid the pilot in insuring that he/she understood the clearance limit issued by ATC.

Tom Schneider, AFS-420, stated that there is new guidance in the draft FAA Order 8260.19G for STARs, soon to be in internal coordination. Tom added that part of that revision included new language regarding lost comm and on connecting the STAR terminus altitudes to the coinciding altitudes on IAPs. Orders 8260.3C and 8260.58A also have portions of this criteria issue and will soon be going out for comment. Some of this new guidance was recommended by the PARC and by the Climb/Descend Via WG.

Ted Thompson, Jeppesen, commented that it appeared to him that the continuity issue between the STAR and IAP pertains to a huge database coding issue. Ted added, if the information on the source document were improved to indicate the connection between the STAR and associated approaches, the FMS process would be better. Ted also agrees that with regard to the runway labels, the procedure source document needs to spell out what should be charted.

Valerie summarized that the bulk of this issue is related to procedure design and criteria. She stated that the runway label charting piece of this item will remain on the Charting Group agenda. Valerie will create prototype STAR charts with runway identifiers in the planview to determine the level of difficulty of fitting this information into an already cluttered chart. She will also work up suggested text to be documented on the source document that will support the runway ident charting at the terminus points.

For the policy aspects of this recommendation, it was determined that industry (APA, NBAA and others) will review the new criteria in the draft Orders and submit comments through the normal coordination process. This item will not be added as an agenda item with the ACF-IPG because the transfer of STAR policy and criteria to FAA Orders 8260.3C, 8260.19G, and 8260.58A and the changes therein are still a work in progress. If industry is not satisfied with the outcome of their submitted comments to the draft policy, any specific issues may be introduced to the ACF-IPG at a future date.

STATUS: OPEN

ACTION: Valerie Watson, AJV-553, to create prototype STAR charts depicting terminus runway idents and the suggested procedure source text that would support charting them.

ACTION: Tom Schneider, AFS-420, will provide an update on the status of FAA Orders 8260.3C, 8260.19G, and 8260.58A.

15-01-294 Charting Maximum Assessed Holding Altitude and Associate Speed

Tom Schneider, AFS-420, briefed the new recommendation document on behalf of submitter, Steve Jackson. Tom stated that the proponent is recommending that maximum assessed holding altitudes and associated airspeeds be depicted on all charts.

Michael Stromberg, Air Wisconsin, commented that ATC should know the limits of a holding area and this information should not be on the charts.

Ted Thompson, Jeppesen, pointed out that adding this information to all holding patterns on all charts would have a significant impact on chart congestion.

Valerie Watson, AJV-553, stated that there is a mechanism in place to require speed restrictions charted on specifically designated locations on both Enroute and Terminal charts. Perhaps it would be preferable to show only these exceptions when deemed necessary, as is the current practice, rather than to show all. Gary Fiske, AJV-82, agreed that it should only be charted if it is outside the norm. He also expressed that depicting all of the holding pattern details on every chart may cause the pilots to unnecessarily question ATC. Tom commented that the FAA Order 7210.3 does require that holding pattern information be available to the controllers at an ATC facility.

Discussion then shifted to the criteria governing holding patterns and the charting of them. Valerie stated that FAA Order 8260.19 supports annotation of the procedure source document to both indicate what holding pattern(s) should be charted on a given procedure and that if the holding pattern requires a specific (non-standard) speed restriction. When the speed restriction is annotated on the 8260 procedure source document, it is charted.

There was a general consensus within the ACF audience that there is no need to chart the maximum assessed altitude and associated speed for holding patterns unless it is outside of standard and indicated for charting on the 8260 form. It was agreed to close the issue.

STATUS: CLOSED

15-01-295 Charting of Airports for the MON

Leo Eldredge, Contract Support, AJM-324, [briefed the audience on the background of the issue](#). Leo stated that there are currently 145 airports that will be designated as MON airports that support instrument approaches independent of GPS.

Vince Massimini, MITRE, showed a presentation on how the proposed VOR discontinuance would impact instrument flight procedures, VOR-based routes within the enroute network, and the availability of VORs within the NAS. The graphics helped illustrate how a NAS with fewer VORs would impact many airports and would subsequently impact the total number of procedures available at those airports that are dependent upon those VORs.

Vince stated that VOR airway segments will be cancelled and replaced with RNAV routes as necessary. Gary McMullin, Southwest Airlines, inquired if the FAA, in their planning for the MON, had a means to see how often/frequently air routes are currently utilized in today's NAS. Vince replied that yes, the FAA does have the data to be able to see route utilization and is taking that data into account.

Discussion then shifted to the basis of the Recommendation Document (RD), which is the identification of MON airports where instrument approach procedures would be available in the event of a GPS outage. Proposed chart symbology of an airport symbol with an M inside or above the airport symbol was shown to the audience for discussion of its possible depiction on enroute charts. It was also discussed that the MON airports might best be identified only in the AFDs.

The emphasis of the discussion focused on a quick and easy way for a pilot to readily identify airports that are MON Airports and where he could safely land in the event of a GPS outage. The discussion quickly broadened to other implications associated with identifying airports as MON Airports. Kevin Bridges inquired as to whether MON Airports would impact flight planning and filing for alternate airports for IFR Flights.

Michael Stromberg, Air Wisconsin, asked about the rate of GPS outages. Vince responded that there are several hundred outages during the year on a local basis, i.e. near military bases when vast military operations are taking place, however, for the GPS system overall, the chance of a complete GPS outage is virtually zero. WAAS has made the system more robust. The biggest threat is interference.

Dale Courtney, AJW-292, commented that the key is safety. The FAA needs to ensure that, should there be a catastrophic GPS failure, coupled with a loss of ATC, there is a means to get aircraft safely back on the ground.

Discussion shifted as to what was the best way to move forward. The consensus that prevailed was that a workgroup should be formed to research and resolve the multiple facets of implementation of the MON. Vince volunteered to chair the workgroup.

MON Workgroup		
Name	E-mail	Phone
Vince Massimini (WG Chair)	svm@mitre.org	703-883-5893
Leo Eldredge	Leo.eldredge@tetrattech.com	571-359-0053
Valerie Watson	Valerie.s.watson@faa.gov	301-427-5155
Ted Thompson	Ted.thompson@jeppesen.com	303-328-4456
Leonixa Salcedo	Leonixa.Salcedo@faa.gov	202-267-9901
Dale Courtney	Dale.courtney@faa.gov	202-267-4537
John Moore	John.moore@jeppesen.com	703-505-0672
Jeff Gingras	Jeffrey.gingras@jeppesen.com	303-328-4489
Michael Wallin	Michael.wallin@faa.gov	202-267-6494
John Kernaghan	Jkernagh@its.jnj.com	610-996-2977
Brad Rush	Brad.w.rush@faa.gov	405-954-0188

STATUS: OPEN

ACTION: The MON Workgroup will meet to discuss the issues and Vince Massimini, MITRE, will report back.

VII. Closing Remarks

Valerie Watson, AJV-553, thanked the attendees for their participation and voiced special appreciation to Steve VanCamp and Pragmatics, Inc. for hosting the ACF.

Notices of the official minutes will be announced via email and provided via the Internet. The two website addresses (CG and IPG) are provided below:

- Charting Group – http://www.faa.gov/air_traffic/flight_info/aeronav/acf/
- Instrument Procedures Group – http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs420/acfigp/

Please note the attached Office of Primary Responsibility (OPR) listing for action items. It is requested that all OPRs be prepared to provide verbal input at the next Forum or provide the Chair, Valerie Watson (with an informational copy to Alex Rushton, Contract Support), a written status update. These status reports will be used to compile the minutes of the meeting and will serve as a documented statement of your presentation.

Appreciation to Jennifer Hendi, AJV-553, for presentation assistance for both the CG and IPG portions of the forum, conference support pre- and post-conference, and to Alex Rushton, Contract Support to AJV-553, for taking the minutes and conference support pre- and post-conference.

VIII. Post ACF Announcements

FAA 2015 NextGen Progress Report Published

FAA Headquarters released the 2015 NextGEN Progress Report which included status and additional information related to various topics discussed during the course of ACF 15-01. The report is available online at http://www.faa.gov/nextgen/media/NextGen_Implementation_Plan-2015.pdf.

AeroNav Products Name Migrating to Aeronautical Information Services (AIS)

AeroNav Products has reorganized and changed its name to Aeronautical Information Services (AIS) and its routing code to AJV-5. Any reference to AeroNav Products refers to AIS. In the coming months, the AeroNav Products home page address will change over to Aeronautical Information Services.

IX. Next Meeting

ACF 15-02 is scheduled to be held on October 27-29, 2015, hosted by Lockheed Martin at their Global Vision Center in Crystal City, VA.

ACF 16-01 is scheduled to be held on April 26-28, 2016, hosted by ALPA at their Herndon, VA location.

ACF 16-02 is scheduled to be held on October 25-27, 2016, location and host to be determined.

X. Attachments

- a. 15-01 Attendee Roster
- b. Office of Primary Responsibility (OPR)

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 15-02 – October 28 - 29, 2015

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 15-02-296

Subject: New Chart Symbol for Unmanned Free Balloon Activities and Request to Add “Rocket” to Space Launch Activity Areas

Background/Discussion:

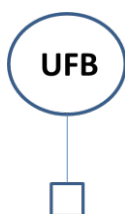
Amateur rocket activities in the NAS are not considered “Space Launch” activities. We have specific sites in the U.S. where high-powered amateur rockets are launched 90% of the time and on a regular basis.

Unmanned free balloon activities are increasing in the NAS and we have several locations where a number of balloons are launched daily. It would enhance situational awareness for users if a symbol could identify these locations on our charts.

Recommendations:

Request that “rocket” be added to the description in U.S. Government Specifications, Sectional Aeronautical and VFR Terminal Area, IACC 2, Chart Appendix 7. New description would read, “Space Launch/Rocket Activity Areas” so current symbol could cover both space launch rockets and amateur rockets.

Request that a new symbol be made available for unmanned free balloon activities. Suggest that the following be added to Appendix 7 under Special Activities Area; “Unmanned Free Balloon Activities”. Also suggest the following symbol:



Submitted by: Paul Eure
Organization: FAA/AJV-113
Phone: 202-267-8745
E-mail: paul.eure@faa.gov
Date: June 11, 2015

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 15-02 – October 28 - 29, 2015

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 15-02-297

Subject: Charting of HILPT Maximum Holding Altitude

Background/Discussion:

The instrument approach procedure Holding Pattern In Lieu Of Procedure Turn (HILPT) is designed to facilitate alignment with the final approach course. The descent gradient from the HILPT altitude to the Final Approach Fix (FAF) altitude is limited by TERPS criteria to permit aircraft deceleration and configuration for the final approach. Due to a combination of this descent gradient requirement and the surrounding terrain, it may be necessary to employ a smaller than desired holding pattern template to define the HILPT protected airspace. Use of this smaller template may require the designation of a maximum holding altitude on the 8260-2 Form. This becomes the maximum altitude the aircraft is permitted to enter the HILPT unless ATC can ensure obstacle clearance by keeping the aircraft at or the minimum vectoring altitude (MVA) or the minimum IFR altitude (MIA) until the aircraft is established on a segment of the published procedure.

Figure 1 shows the RNAV (GPS) Rwy 20 approach at Alamosa, CO (KALS). The HILPT altitude is 10,800' MSL. Figure 2 shows the FAA 8260-2 Form for JADGU. The maximum holding altitude shown at JADGU is 12,000' MSL. Figure 2 depicts the protected airspace for the HILPT at JADGU based on the P10 pattern. Use of this pattern is required to allow the HILPT protected airspace to remain clear of the terrain to the east of Alamosa. A larger holding pattern would permit holding above 12,000' MSL. However, because of the terrain to the east, the use of a larger holding pattern template is not possible at this location.

Figure 4 shows an overlay of the MIA altitudes in the vicinity of ALS. At most airports, ATC can bring the aircraft to the HILPT at or above the MVA or MIA and below any maximum holding altitude published on the 8260-2 Form. However, at Alamosa the MIAs east of the holding pattern protected airspace are at or above 16000' until just prior to JADGU. It is nearly impossible for ATC to clear an aircraft direct-to JADGU from the east at the 16000' MIA, and then descend the aircraft to cross JADGU at or below 12,000' as required by the holding pattern's maximum altitude prior to clearing it for the approach. This would require a descent of 4000 feet in little over 2 miles.

It is important to note that the airspace above the JADGU holding pattern's protected airspace area that ends at 12,000' MSL and the airspace below the overlying MIA has not been assessed for obstacle clearance as required by 14 CFR part 97. Aircraft operating within this 4,000' zone have no assurance of obstacle clearance if holding in the JADGU holding pattern or executing the HILPT between 12,001' MSL and the MIA.

During the discussion of ACF CG agenda item 15-01-294, it was clearly apparent that air traffic controllers do not have ready access to the 8260-2 Forms indicating maximum holding altitude,

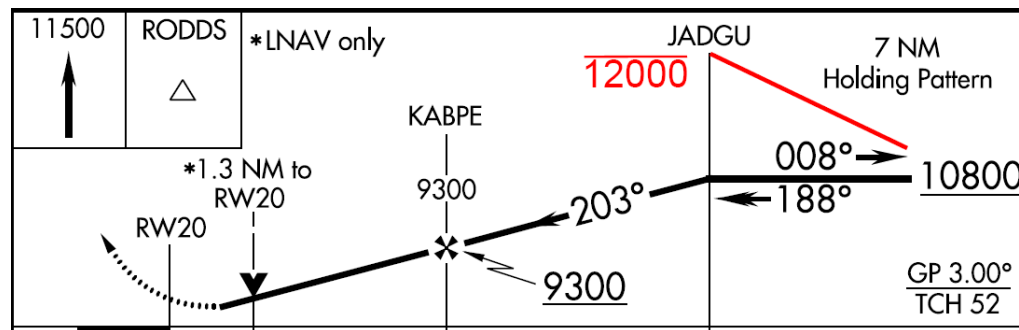
and therefore, are unlikely to be aware of the requirement for the aircraft to enter the HILPT at or below the maximum holding altitude when that altitude is below the applicable MVA or MIA

This similar situation exists with procedure turns. Figure 5 shows the VOR/DME – B approach to Dillon, MT (KDLN). The maximum altitude at the IAF (WAKUX) is 10,000' MSL for entry into the procedure turn. Limiting the maximum altitude at WAKUX permits the use of the TERPS procedure turn protected airspace template specified for use with altitudes 10,000' MSL and below. If the larger template for above 10,000' MSL were used, then the procedure turn altitude would need to be raised, which in turn would result in a higher altitude at the FAF.

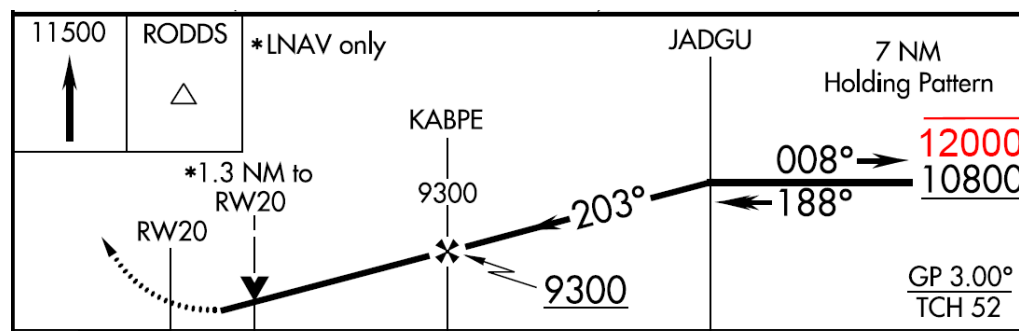
Recommendations:

NBAA proposes that the same charting requirement applicable to a procedure turn when the 10,000' and below template is used, which is to chart a maximum "at or below" altitude at the IAF, be applied to a HILPT when a maximum holding altitude is specified on the 8260-2 Form. If this maximum holding altitude is specified for ATC-purposes, then this maximum altitude need not be published on the procedure chart.

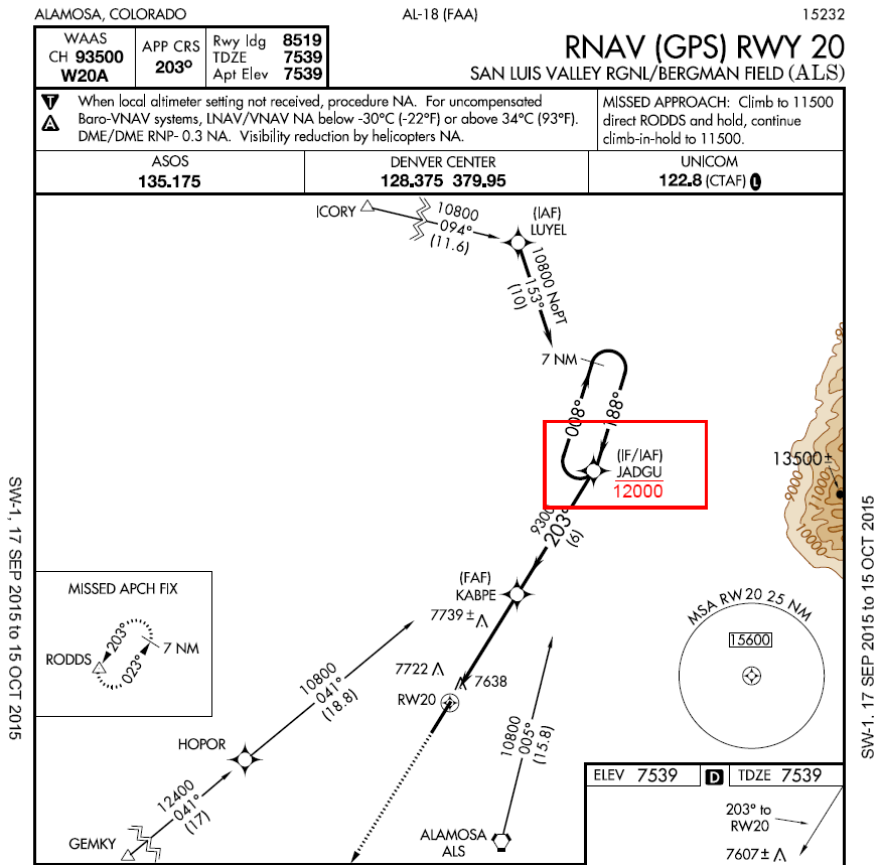
Using the Alamosa RNAV (GPS) Rwy 20 approach example, JADGU would have an "at or below" 12,000' MSL altitude limit depicted in the profile view, as shown below:



Alternatively, a window, "at or below" and "at or above" altitude can be charted in the profile view. We invite the assistance of the ACF to determine the preferred method:



In addition to charting the "at or below" altitude in the profile view, the altitude should also be depicted in the approach plan view, as shown below:



NBAA recommends that guidance be furnished in the Aeronautical Information Manual (AIM) to explain to pilots the purpose of maximum altitude charted for an HILPT entry. Further, we recommend that the Air Traffic Organization (ATO) take action to explain to controllers in the 7110.65 Air Traffic Order the purpose and limitations of the maximum HILPT altitude and a maximum procedure turn entry altitude charted on instrument approach procedures if such guidance does not currently exist.

Comments:

This recommendation affects:

- FAA Order 8260.3B, U.S. Standard for Terminal Instrument Procedures (TERPS)
- FAA Order 8260.19, Flight Procedures and Airspace
- FAA Order 7110.65, Air Traffic Control
- Aeronautical Information Manual

Submitted by: Richard J. Boll II
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Date: 9/21/2015

Figure 1

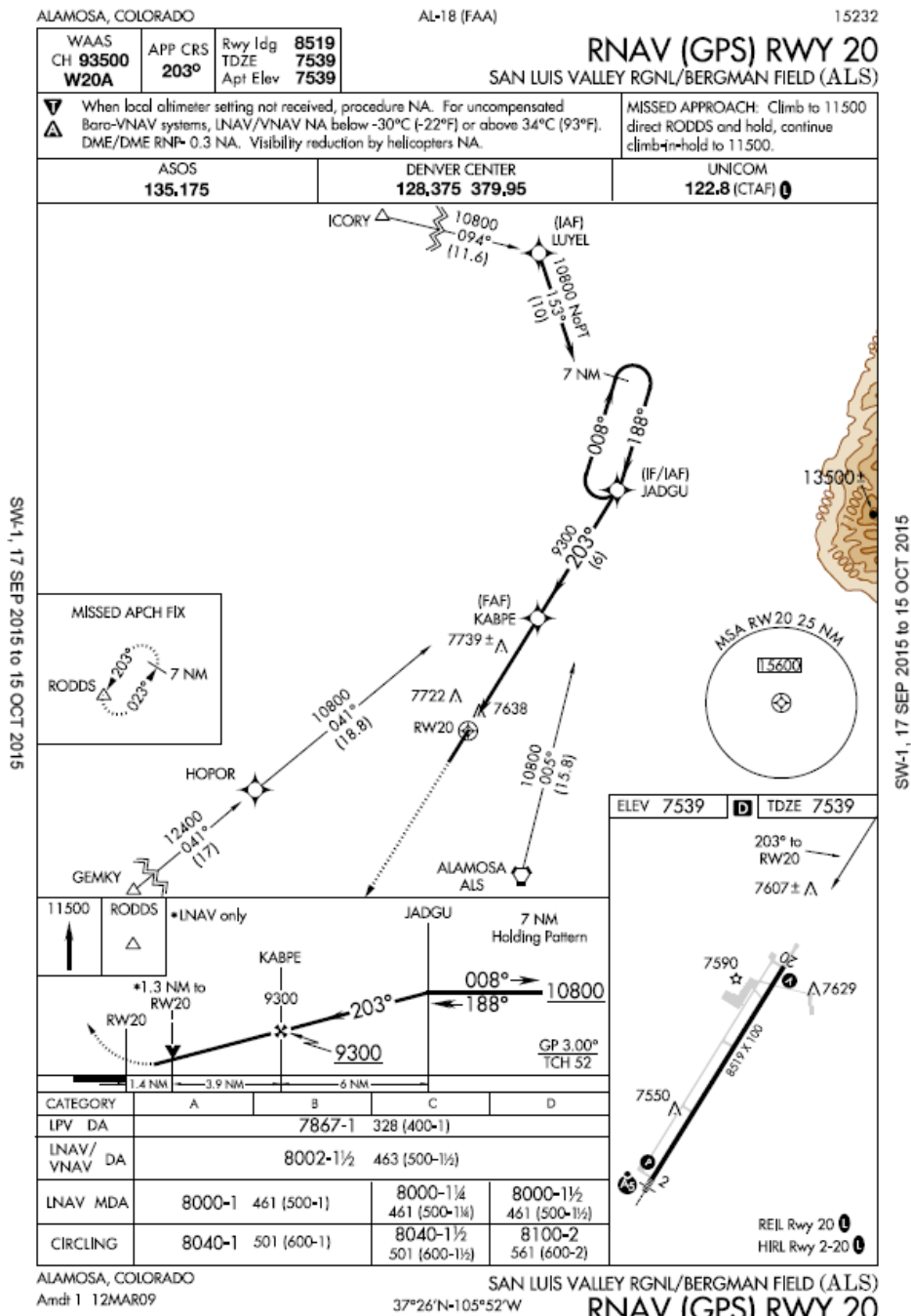


Figure 2

RADIO FIX AND HOLDING DATA RECORD													
NAME: JADGU				STATE: CO				COUNTRY: US					
LATITUDE/LONGITUDE: 373619.86N/1054406.75W				TYPE: WP									
AIRSPACE DOCKET:				FIX TYPE OF ACTION: MODIFY									
FIX MAKE-UP FACILITIES:													
FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	FAC FEET	MRA	MAA		
1	KALS R20					031.77	11.31				17500		
HOLDING:				HOLDING TYPE OF ACTION: MODIFY									
PATTERNS:													
PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	DME	HOLDING ALTITUDES MIN	MAX	TEMPLATES MIN	MAX	
1	N		WP	007.85	187.85	R	7	10800	12000	10	10		
2	NW		WP	334.85	154.85	R	7	10500	12000	10	10		
CONTROLLING OBSTRUCTIONS:													
PAT	AIRSPACE	OBSTRUCTION	COORDINATES				ELEVATION		ACCURACY CODE				
1	230	AAO	375236.00N/1053500.00W				10689		4E				
2	230	AAO	374721.00N/1054048.00W				7907		4E				
REMARKS:													
HOLDING LIMITED TO ESTABLISHED PATTERN.													
PAT 1 CONTROLLING OBSTACLE IN 11808FT INTO SECONDARY. PRIMARY EQUIVELANT HEIGHT 9705FT.													
PRECIPITOUS TERRAIN EVALUATION COMPLETED: PAT 1, 2 NO ADJUSTMENT.													
FIX USE:													
USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY					STATE			
IAP				KALS	ALAMOSA					CO (US)			
SAN LUIS VALLEY RGNL/BERGMAN FIELD - RNAV (GPS) RWY 20 (PAT 1), RNAV (GPS) RWY 02 (PAT 2)													
REQUIRED CHARTING: IAP													
COMPULSORY REPORTING POINT: NO													
RECORD REVISION NUMBER: 1				DATE OF REVISION: 03/12/2009									
REASON FOR REVISION:													
ADDED HOLDING PAT 2.													
DECREASED AIR/GROUND COMM FROM 10700 TO 10500.													
ADDED PRECIPITOUS TERRAIN REMARK.													
CHANGED PAT 1 CRS INBOUND FROM 184.85 TO 187.85.													
DME DISTANCE INCREASED FROM 11.29 TO 11.31.													
FIX MOVED 150' EAST.													
INCREASED PAT 1 HOLDING ALTITUDE FROM 10700 TO 10800.													
DEVELOPED BY:		DATE: 07/03/2008		OFFICE: AVN-130		NAME: JIMMY HUGHES							
APPROVED BY:		DATE: 11/24/2008		OFFICE: AVN-130		NAME: RICK WEBB							
SIGNATURE:													
DISTRIBUTION:		NFDC											
		FPO: WST											
		ARTCC: ZDV											
		ATC FACILITY:											
		OTHER:											

Figure 3

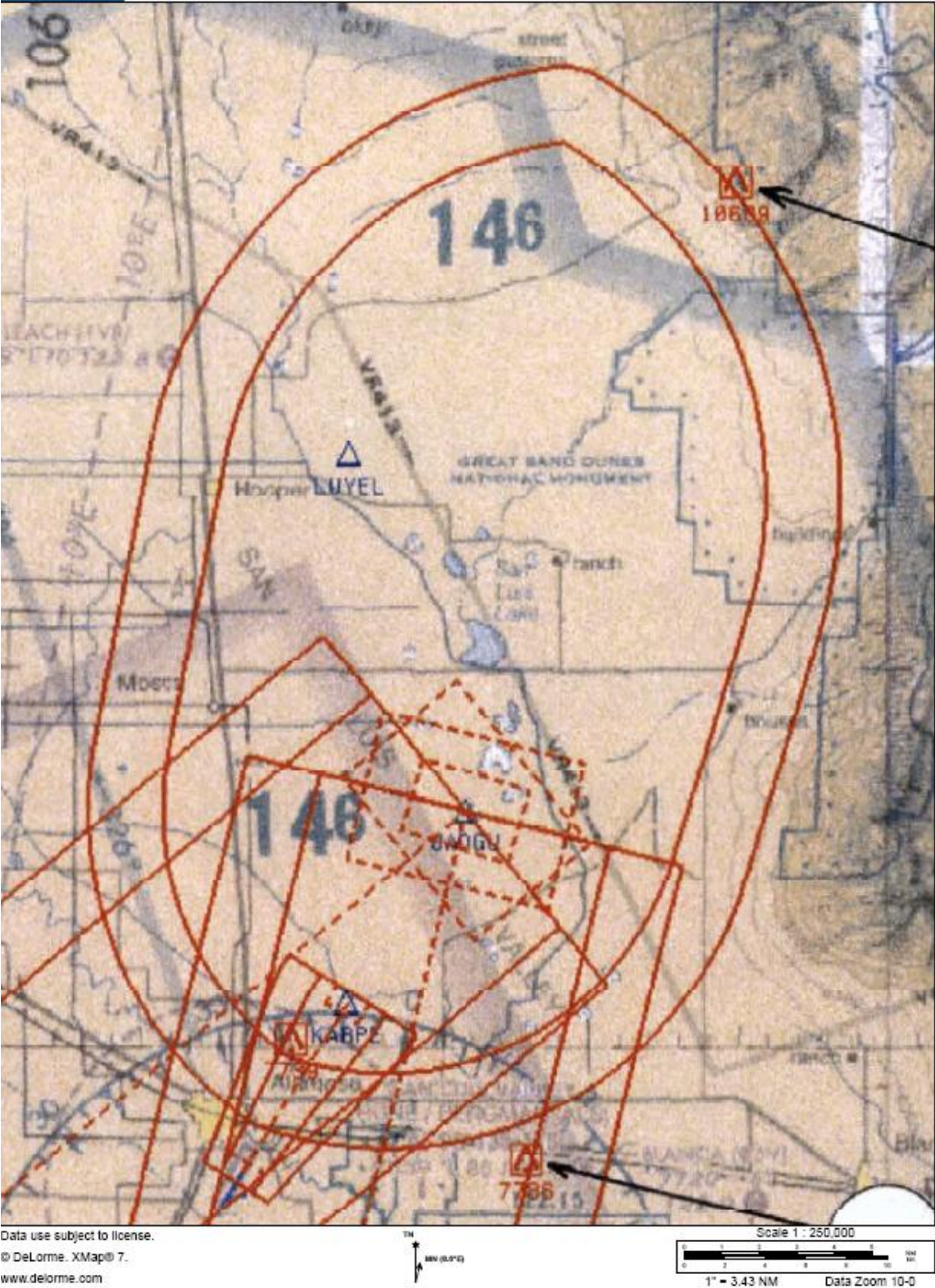
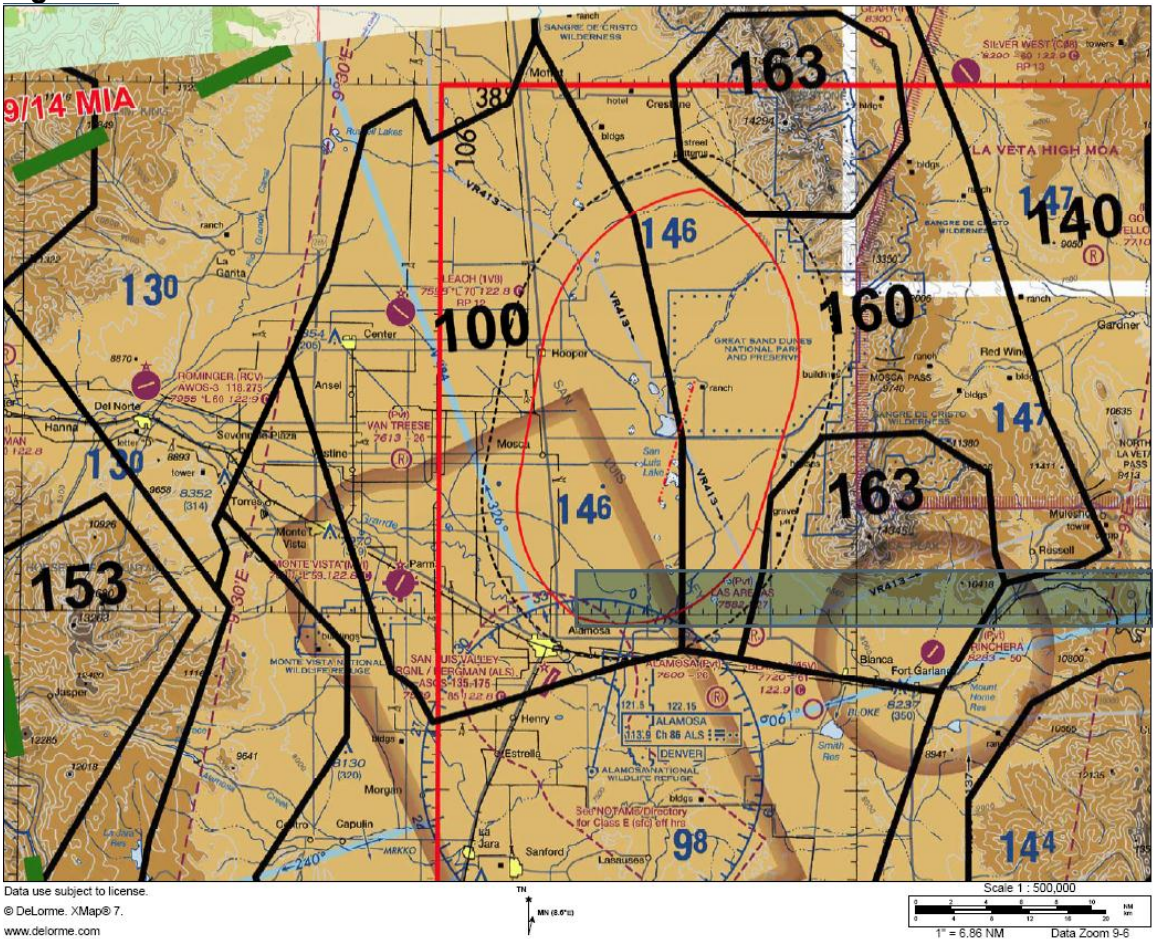
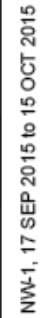


Figure 4



NW-1, 17 SEP 2015 to 15 OCT 2015



AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 15-02 – October 28 - 29, 2015

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 15-02-298

Subject: Charting GLS DMax (Service Volume)

Background/Discussion:

GLS ground stations have varying service volumes based on installation and siting. Because ATC can expect a pilot to join the final approach course (FAC) out past the service volume, pilots must use LNAV and VNAV to fly the procedure until inside the service volume. Afterwards, the APP mode should be used to complete the approach. Without charting DMax pilots have no reasonable way to know whether they need to use LNAV or APP to join the FAC nor do they have a reasonable way to know when to abandon the approach (if satellite coverage does not support the approach) until they reach the FAF.

Recommendations:

Chart DMax either in the profile or plan view or both.

Comments:

Submitted by: Ron Renk
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E-mail: ron.renk@united.com
Date: 10-2-15

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 15-02 – October 28 - 29, 2015

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 15-02-299

Subject: Add INOP Components Minimums Adjustments to Approach Chart

Background/Discussion: The current inoperative components approach charting scheme relies on a standard inoperative components or visual aids table found in the TPP legends material on page A1. With a printed and bound TPP approach book, this is relatively easy to find by pilots. When nonstandard inoperative components require a different visibility adjustment, notes are added to the approach chart in the briefing strip notes section. While this scheme may work for a paper product, it is not effective for an EFB which will display the approach chart, but not have access to the TPP legend material. In the current EFB environment, it makes more sense to include the visibility adjustments to the chart so the pilot has all the information they need to fly the procedure in one place. This will improve the usability and safety of communicating the correct visibility adjustment to the pilot.

Recommendations: Add the note to the chart for both standard and nonstandard adjustments to visibility to the approach chart. Usually only a single note will apply.

Comments: This could be phased in over time as approaches come up for regular review and update.

Submitted by: John Collins
Organization: ForeFlight LLC
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E-mail: john@foreflight.com
Date: 9-25-2015

AERONAUTICAL CHARTING FORUM
Charting Group
Meeting 15-02-302 October 28 - 29, 2015

RECOMMENDATION DOCUMENT

FAA Control # ACF-CG RD 15-02-300

Subject: Standardized Depiction of Communications on DPs and STARs

Background/Discussion:

Section 3.4.2 of both the IACC-7 and IACC-14 detail communications required on DPs and STARs, respectively. According to both, frequencies should be shown “when available and identified by the formulating agency”. It is left to the applicable tower or procedure developer to determine which frequencies to request on the procedure. Then it is up to charting to weed out the requests on the procedure with the communications information that is provided in NASR. This results in inconsistent charting of frequencies on DPs and STARs.

The IACC specifications for DPs and STARs list the following standard frequencies to be shown in addition to the Terminal Frequency when available and identified by the formulating agency:

IACC 7, Graphic Instrument Departure Procedure Charts

Table 3.1 Additional Communications

Automatic Terminal Information Service	(ATIS)
Automatic Flight Information Service (AK Only)	(AFIS)
Clearance Delivery	(CLNC DEL)
Ground Control	(GND CON)
Tower	(TWR)
Center	(only when there is no terminal facility or DEP CON involved)
Flight Service Station	(RADIO)
Common Traffic Advisory Frequency	(CTAF)
Automated Weather Observing Systems	(AWOS/ASOS)

IACC 14, Standard Terminal Arrival Charts

Automatic Terminal Information Service	(ATIS)
Automatic Flight Information Service (AK Only)	(AFIS)
Ground Control	GND CON
Tower	(TWR)
Center	(only when there is no terminal facility or APP CON involved)
Flight Service Station	(RADIO)
Common Traffic Advisory Frequency	(CTAF)
Automated Weather Observing System	(AWOS/ASOS)

Recommendations:

The ACF should establish standard communications to be charted, when available, on all DPs and STARs.

Comments:

Submitted by: IFP Charting

Organization: FAA/AJV-56

Phone: 301-427-4788

E-mail: allison.m.maliszewski@faa.gov

Date: 10/7/15

